THE PRODUCTION AND MANAGEMENT JOURNAL OF THE NORTH AMERICAN PULP AND PAPER INDUSTRY

PULP & PAPER

"the Cellulose Age"

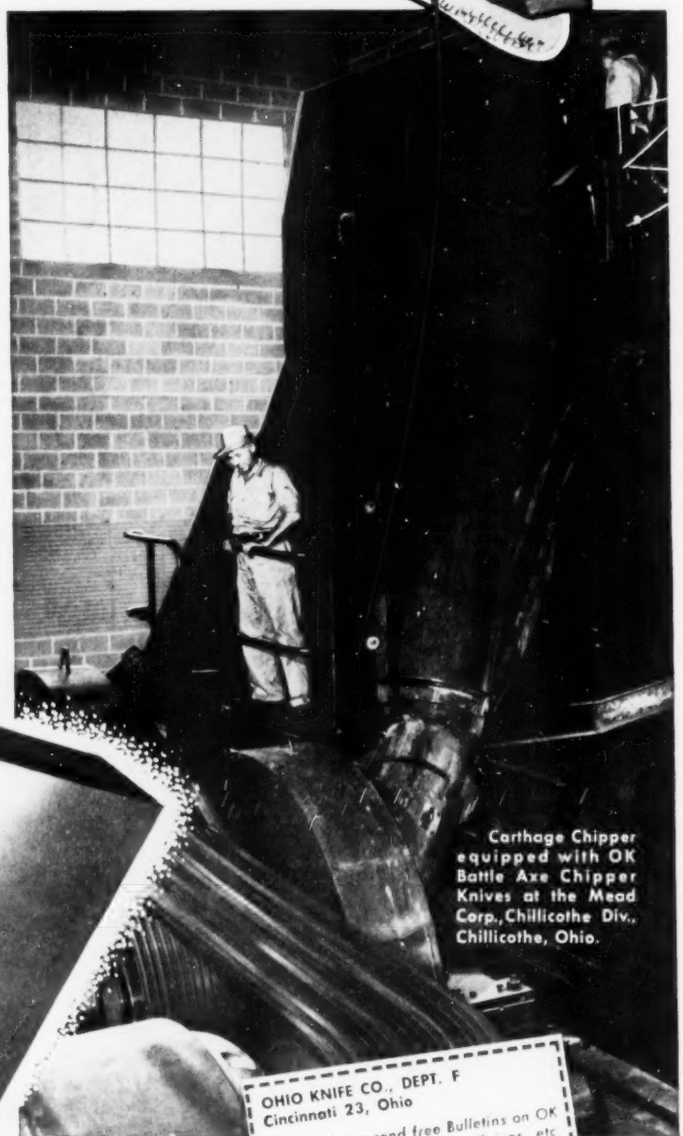
AUGUST 10, 1953 VOL. 27-NO. 9

it's OK ...let'er go!

and uniform chips fly with OK BATTLE AXE CHIPPER KNIVES

Where high production in the nation's leading mills is "must"—there you will find OK Battle Axe Chipper Knives — and there's a reason. OK Chipper Knives take phenomenally heavy feeds and cuts in high heat without chipping or cracking. Specially made of high alloy steel and hardened for maximum toughness. Eliminates downtime due to knife trouble. Specify tough OK Battle Axe Knives today.

Manufacturers of
OK SLITTER KNIVES
REVOLVING CUTTERS
TRIMMERS
CHIPPERS, etc.



Carthage Chipper equipped with OK Battle Axe Chipper Knives at the Mead Corp., Chillicothe Div., Chillicothe, Ohio.

OHIO KNIFE CO., DEPT. F
Cincinnati 23, Ohio

Please send free Bulletins on OK Battle Axe Chipper Knives, etc

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COMPANY _____

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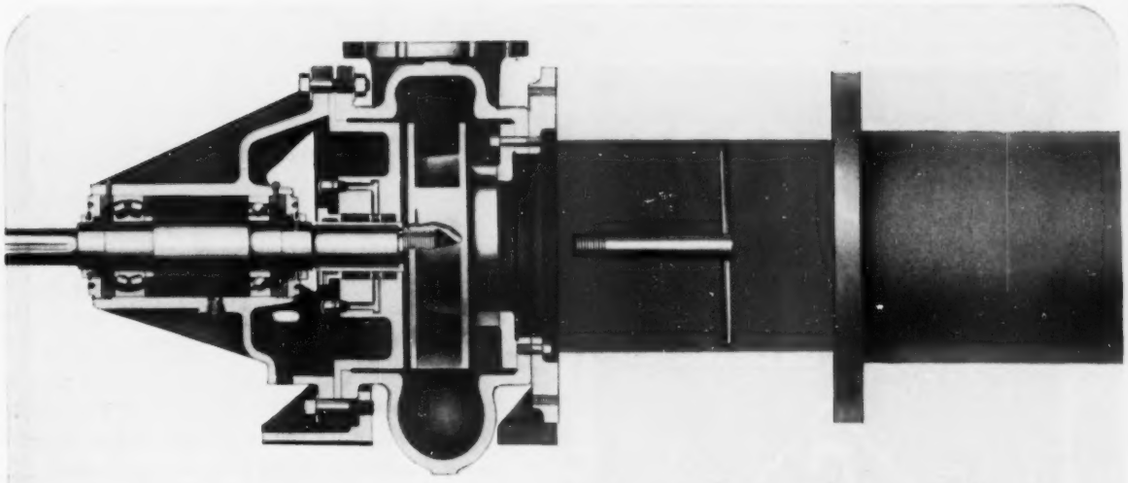
GO WITH OHIO GREEN

THE OHIO KNIFE CO.

CINCINNATI 23, OHIO

Relieves Suction Problems in Pumping Heavy Stocks



PW Pump with 16 inch Suction + **Feeder Vane Assembly** + **Large Suction Piping**

STOCKS UP TO 6% HANDLED WITH EASE; HEAVIER STOCKS UNDER SOME CONDITIONS

YOUR SUCTION PROBLEMS in handling heavy stocks can be greatly reduced by the use of an Allis-Chalmers Paper Stock Pump with 16 inch suction opening. This means that you can take full advantage of the economy of handling stock at the highest possible consistence.

Increased NPSH

Allis-Chalmers has developed a paper stock pump with a full 16 inch suction opening for discharge openings from 4 to 12 inches. This means absolute minimum friction loss right up to the eye of the impeller. Available Net Positive Suction Head is increased. In addition, a feeder vane assembly is available to further improve suction conditions. The action of the feeder vane as it rotates with the impeller moves the stock into the eye of the impeller, increasing the NPSH at this critical point.

Handles 6% Stock

With the feeder vane assembly, this Allis-Chalmers Paper Stock Pump is successfully handling stock up to 6% consistence, and under favorable conditions even heavier stocks.

For information on how this pump can help you, and the assistance of an experienced paper mill pump engineer, get in touch with your Allis-Chalmers District Office or write for Bulletin 52B7112. Allis-Chalmers, Milwaukee 1, Wisconsin.

A-3905

ALLIS-CHALMERS

PULP & PAPER

Production and Management Magazine of the Industry

August 10, 1953
Vol. 27—No. 9

"The Cellulose Age"

IN THIS ISSUE

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WILLIAM J. KREBS ..... Associate Editor
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PULP & PAPER circulates all over the world—throughout the United States, Canada, Mexico, Alaska, Hawaii, the Philippines, Australia and New Zealand, Argentina, Brazil, Chile, Colombia, Cuba, Ecuador, Guatemala, Uruguay, Venezuela, England, Ireland, Scotland, Sweden, Norway, Finland, France, Germany, Austria, Belgium, Italy, Netherlands, Portugal, Spain, Switzerland, Yugoslavia, India, Pakistan, Israel, Morocco, Egypt, Turkey, South Africa, China, Hong Kong, Japan, Formosa, near and far around the world, wherever pulp and paper are made.

Should U. S. Tree Census Be Cooperative Project?

It seems to us that it would be in the best interests of the United States as a whole if a practical method could be devised to make the current and very important "Tree Census" under way in this country a joint government-private industry undertaking.

By "Tree Census" we mean what the U. S. Forest Service calls its decennial Timber Resources Review, which is due for completion in 1955. Last one was for 1945.

The U. S. government owns or manages publicly owned forestlands which comprise nearly 20 percent of all tree-growing land in this country. Private ownerships total about 75 percent, large holdings being 11 percent. States and counties own 6 percent.

It is well known that figures can be juggled to prove almost anything. Industry has often charged that exactly this has happened in the past Timber Resources Reviews.

Again these charges are heard. For instance, in the current census, there is no inventory being taken of dead trees. Yet, in many logging areas, from 50 to 100 percent of the *utilized cut* is salvaged dead trees! Also many uncounted snags are salvaged today in "re-logging" operations.

The big Tillamook Burn in Oregon was crossed off as a loss by the Forest Service. Amazingly, the Service even underestimated the loss! Actually more dead wood than it figured has been brought out of the burn and utilized in pulp mills, etc.

Industry points to what it considers other fallacies in the government count. No need to detail them here. Point is that because of these objections, many informed persons—not only in private industry but in other public agencies, schools, etc.—have no confidence in the Forest Service survey.

Yet these figures are used in textbooks, in millions of words of propaganda. There are no other figures to turn to.

Confidence in the figures could be established if it were, in some way, a joint undertaking, with joint responsibilities and decisions. Perhaps states, institutions, railroads, etc., who own timber, should have a voice, too.

Another important point is this: It is natural for the Forest Service to lean to the conservative side—sometimes too far. This is no criticism. Perhaps it should be conservative, always. But, often, it will underestimate speed of tree growth, amount of cutting that should be done, as industry professionals have proven.

The liberal point of view—as long as it is honest, ethical and professional—should be heard, too, in the 1955 tree count of this country.

Private Industry Takes the Lead

Many leading state and industrial foresters have harbored honest and fearful suspicions that some elements in the U. S. Forest Service relished the idea of gaining controls over 4,250,000 small woodlot owners of the United States, who own 57 percent of the forest lands of this country.

Twenty years exposure to New Deal philosophies could not help but have an effect upon the philosophies and aims of the Forest Service. This, we are assured, will now change under the Eisenhower-Benson regime.

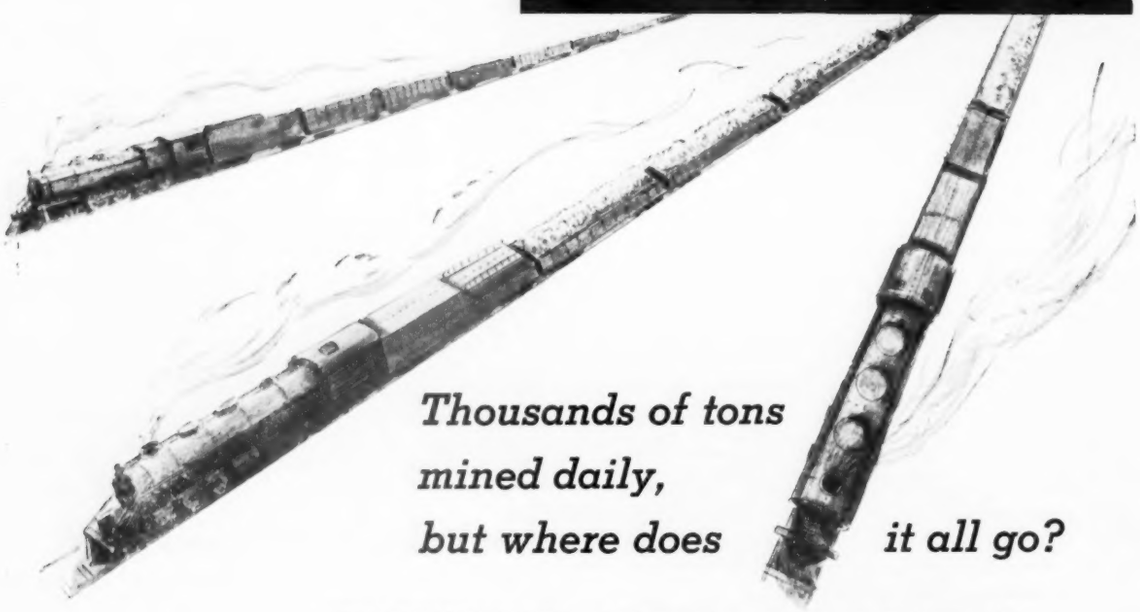
There is no question, however, that steps are urgently needed to develop better forest management on these small woodlots. To teach the millions of owners that they can create new and continuing incomes for themselves by enlightened practices. Past Forest Service pronouncements aroused suspicions that some of its leaders were more interested in gaining power and authority over these small land owners than in helping them.

But now, private industry, through the American Forest Products Industries Inc., has taken the lead in attacking this problem. It called the unique National Farm Woodlot Conference in Chicago (full report in PULPWOOD SECTION of this issue). All interested parties, public and private, were represented. They agreed that this should be a joint undertaking (and not entirely free handouts), worked out at local levels and not in Washington, with "close teamwork" between private and public agencies.

U. S. Chief Forester

Richard E. McArdle, chief of the U. S. Forest Service, recalls with pleasant nostalgia that the first technical paper he ever wrote on forestry for wide distribution was written many years ago for THE LUMBERMAN, companion publication of PULP & PAPER. He was with the Service in Portland, Ore., and Douglas fir was subject of his article.

Sulphur



Thousands of tons mined daily, but where does it all go?

LOOK AROUND YOU and let your glance fall on any object. The chances are 1000 to 1 that sulphur played an important role in its manufacture, either as a component part of the finished product or as a processing element.

Take, for example, the very magazine you are reading. If it's average size it weighs about 1 pound. Made largely of sulphite pulp it required about 0.1 pounds of sulphur in its manufacture.

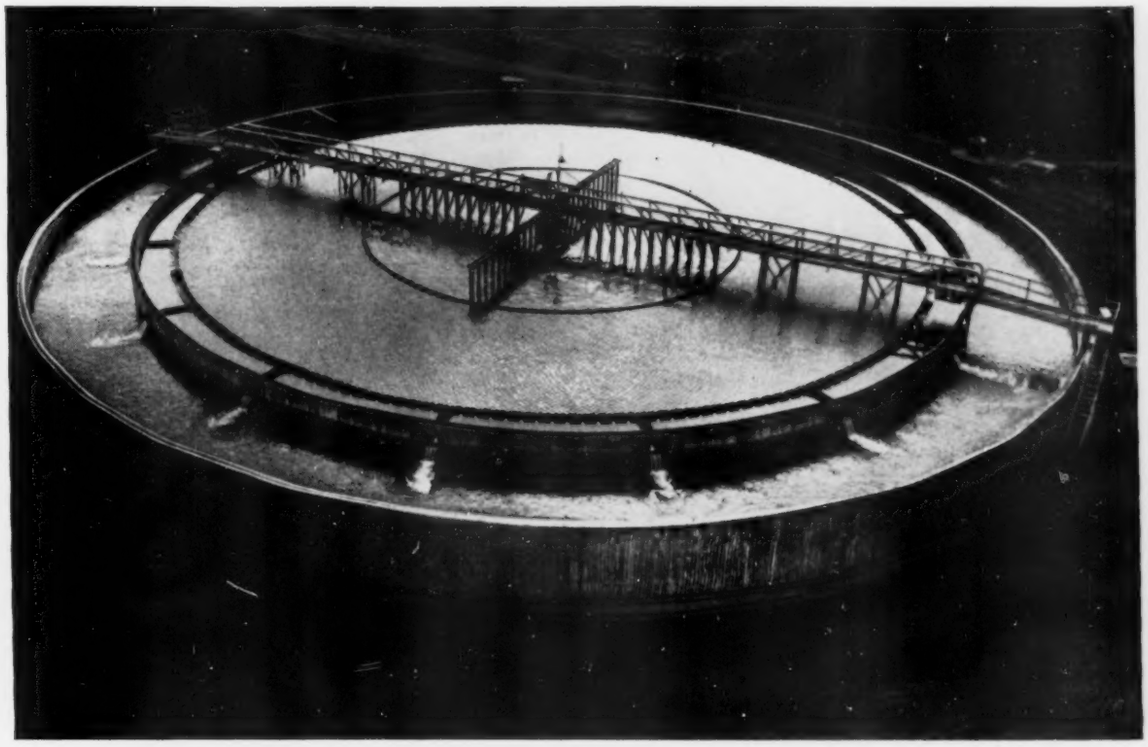
Multiply this 0.1 pounds of sulphur by the thousands of magazines turned out every day and you'll get some idea of the tremendous tonnage of sulphur required for this *single* division of industry . . . the sulphite pulp manufacture.

Sulphur has long been called One of the Four Pillars of Industry. Today's need emphasizes this fact more than ever. Sulphur producers are making every effort to get maximum production from existing mines and to develop new sources of sulphur as quickly as possible.

Texas Gulf Sulphur Co.

75 East 45th Street, New York 17, N. Y.

Mines: Newgulf and Moss Bluff, Texas



Located at Fibreboard Products, Inc., Antioch, Calif., this Clariflocculator treats 14 MGD of San Joaquin River water for process use. A 15' wide annular storage reservoir surrounds the 150' dia. Clariflocculator and a Dorrco VM Pump removes the dense underflow at minimum water loss.

No "Magic Formula" Approach Here...

Supplying 14 MGD of clear, process water for a West Coast Pulp Mill called for more than a "magic formula." Like all well-designed water treatment plants, it called for a detailed analysis of the problem. Raw water composition, rate of flow, results required, and local conditions were all studied before selecting the type of treatment to be used. The most efficient answer in this case was combination treatment with a Dorrco Clariflocculator.

There is no magic formula for every type of water treatment problem . . . no single equipment unit that will give ideal results under all conditions. For a brief picture of the complete Dorr equipment line for both conventional and high-rate treatment, write for Bulletin #9141, The Dorr Company, Stamford, Conn.

Clariflocculator is a trademark of The Dorr Company, Reg. U. S. Pat. off.

Every day nearly 8 billion gallons of water are treated by DORR equipment

Better tools TODAY to meet tomorrow's demand

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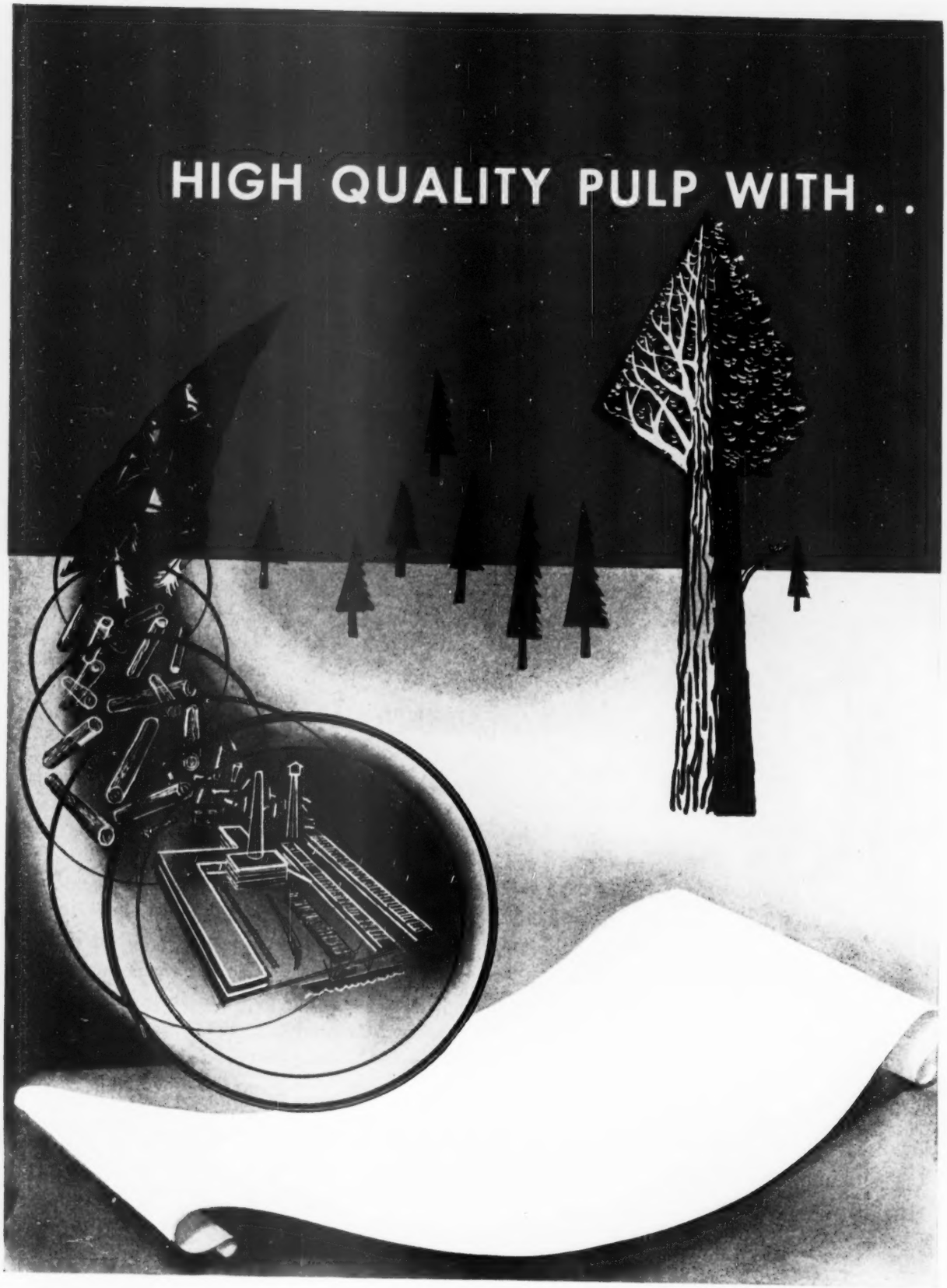
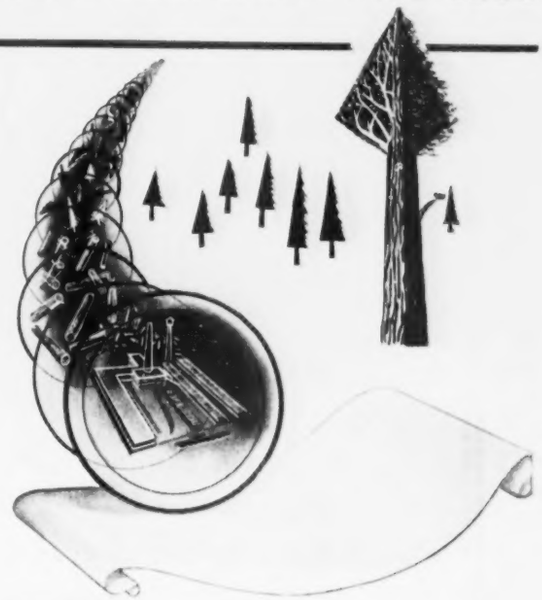

HIGH QUALITY PULP WITH . .

. . SUTHERLAND HIGH YIELD SULPHATE PROCESS



WHAT IT IS

A revolutionary new method for the production of high quality kraft pulp at yields considerably above any possible in conventional kraft production.

HOW IT WORKS

A high yield pulp is first obtained by heating pieces of wood in an alkaline cooking liquor under limited conditions of temperature, time and alkali concentration such that a pulp is formed consisting of a high percentage of fiber bundles which are not substantially separated. This limited cook is blown from the digester to a blow tank where it is diluted to refining consistency by addition of hot alkaline wash liquor. The diluted pulp suspension is then refined while hot and the refined pulp is washed. The hot alkaline wash liquor is recovered for use in the dilution step.

RESULTS

Mills using this process have reported a 15 to 20% increase in yield over normal operation, and substantial reduction in operating costs as a result of savings in wood. In addition to substantially increased profits, the new process marks a major step forward in wood conservation.

APPLICATIONS

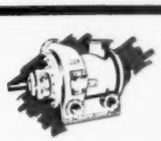
The Sutherland High Yield Process is being used for the production of high yield linerboard and will, in the near future, be applied to other unbleached grades. Bleaching of high yield pulps is a possibility and does result in a marked increase in yield, although at the present cost of wood and chemicals, it does not offer the savings possible in unbleached grades. The use of this system for bleached pulps will follow a natural development course in the foreseeable future.

PATENT

U. S. Patent No. 2,591,106, dated April 1, 1952, has been issued covering this process. While this patent in no way limits the user of the process in his choice of equipment, it does limit the use of the process to licensees of the Sutherland Refiner Corporation. Licenses are available to qualified mills on application to Sutherland Refiner Corporation.

SUTHERLAND REFINER CORPORATION

TRENTON 8, NEW JERSEY



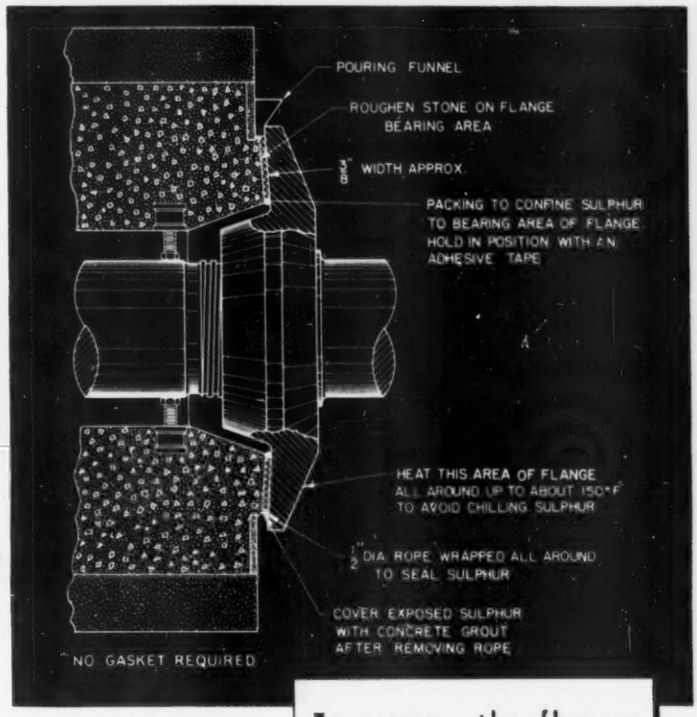
BREAKER TRAPS

PRESSURE WASHING

HIGH YIELD SYSTEMS

MANUFACTURED BY—
VALLEY IRON WORKS CO., APPLETON, WISCONSIN

A Suggested Method of Mounting Pulpstones



Easy to Mount

and even more

important

Easy to Remove

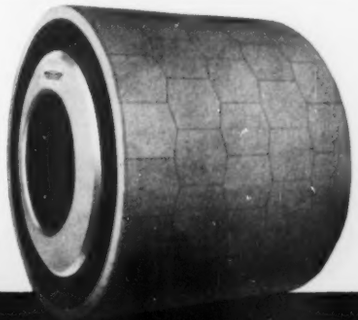
THE method of mounting a pulpstone shown in the drawing has been used in European mills for several years and has recently been adopted by a number of American mills. It has proved so successful wherever it has been tried that we are illustrating it here so that you may use it if it appeals to you.

While a bevel flange is illustrated this method can be used with any type of flange

Norton Pulpstone Engineering Service can be of help to you in many ways, including the specifying of the right stone to produce just the type of pulp which you require.

To remove the flanges the following method is suggested:

1. **Remove the cement grouting covering the sulphur**
2. **Heat the flange in the sulphured area until the sulphur melts**
3. **Then unscrew flange**



NORTON COMPANY, WORCESTER 6, MASS.
Norton Company of Canada, Ltd., Hamilton, Ontario

NORTON
PULPSTONES

Making better products to make other products better

Abrasives · Grinding Wheels · Grinding and Lapping Machines · Refractories · Porous Mediums · Non-slip Floors · Norbide Products

The Airveyor for unloading and conveying lime and salt cake in a paper mill.

There is a DIFFERENCE when Fuller designs and builds your conveying system

Fuller is not restricted to one design and construction but is able to select and apply the right system to conveying dry pulverized and granular materials most efficiently and economically . . . because, selection can be made from four types, or combinations, to meet conditions required: materials to be handled, capacity, distance of travel, and overall characteristics of the plant layout. In other words, each job is given individual study, before the proper equipment is selected and recommended.

Add to this, Fuller's 27 years of experience in the field of pneumatic conveying, and you have something that is hard to beat. It is something that is difficult, if not impossible, to write into specifications or show on blueprints, yet is inherent in Fuller equipment and engineering.

Fuller conveying systems can be installed without interfering with existing structures or equipment, with no production interruptions. Why not have us make a study of your conveying problems. Our findings and recommendations may give you an entirely new concept of conveying.

Write for Bulletin G-1, illustrating and describing the four conveying systems built by Fuller.

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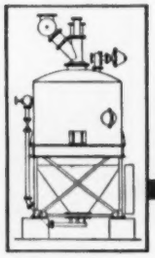
FULLER-FLUXO



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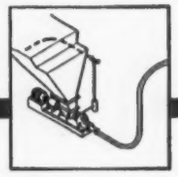
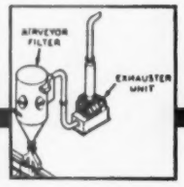
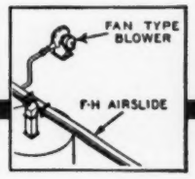


AIRVEYOR



F-H AIRSLIDE



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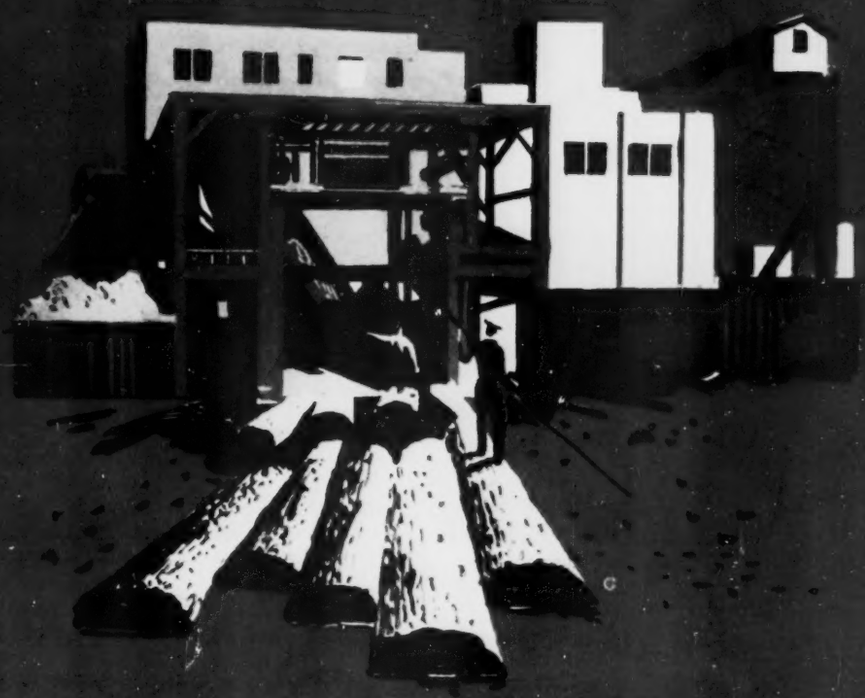
Fuller



WHITER, CLEANER PULP

Puget Sound, long one of the greatest producers of unbleached sulphite wood pulp in the world, has now added fully automatic equipment enabling it to produce *bleached pulp* . . . whiter and cleaner than ever, yet retaining the long-fibre strength for which Puget has always been noted.

PUGET SOUND

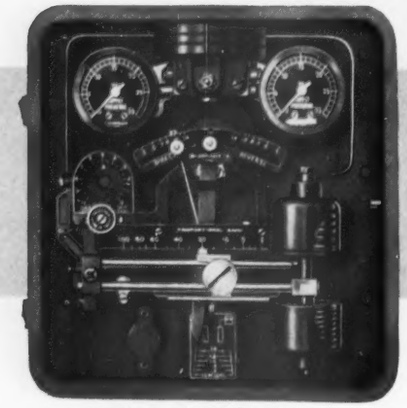
PULP AND TIMBER COMPANY

BELLINGHAM • WASHINGTON

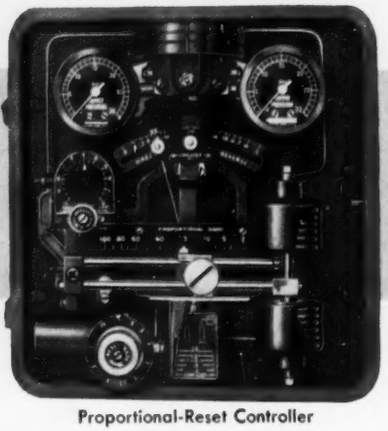
NEW MASONEILAN 12000 SERIES

Offer Accurate, Sensitive,

New Ease of Selection;



Proportional Controller



Proportional-Reset Controller

These new controllers reflect a realistic blending of past experience and current design trends, combining advanced features which reduce weight, improve adjustability and increase ease of selection, installation and servicing.

Consider what these design improvements can mean to you . . .

UNIT CONSTRUCTION

Unit subassemblies of the control mechanisms (proportional, or proportional-reset, unit and level setting mechanism) are mounted on the mechanism bracket which is in turn rigidly attached, piloted and doweled to the torque tube housing. Thus, individual units are fixed in position, unaffected by possible distortion of the case, yet are readily removable for servicing or interchange. Other sub-assemblies (pilot and manifold) are mounted in the rugged aluminum case which is finished and gasketed for outdoor service. Cover is closed by a positive cam-type latch.

SIMPLE AIR CIRCUITS

The high-capacity, balanced, amplifying, pilot with frictionless floating-action valve and cleanable sapphire orifice, is connected to the forged brass manifold which contains most air passages. Tubing in the proportional controller is limited to two short lines. The nozzle is easily removable for cleaning, and after replacement requires no aligning. Special ring type adapters facilitate connections.

EASE OF ADJUSTMENT

Proportional band setting . . . is made on a rod-type cantilever spring by a self-aligning clamp tightened by a large knurled knob located in front of the mechanism. A four-inch direct reading scale indicates the setting.

Control action and specific gravity setting . . . are selected by attaching the control link to desired side of reversing arc along the specific gravity scale, graduated from 0.5 to 1.4. The arc is easily reversible when instrument mounting is changed to opposite side of displacer.

Set point . . . is precisely adjustable throughout entire range by turning setting knob over 270° arc scale, 2" long. Scale is reversible when control action is changed.

Direct level indication . . . is provided by a sturdy pointer fastened directly to the torque tube rod. The scale is graduated for both left and right hand instrument mounting and for several specific gravities.

FOR A WIDE VARIETY OF APPLICATIONS

LIQUID LEVEL CONTROLLERS . . .

Dependable Control – plus

Adjustment and Servicing

Top and bottom connections — integral chamber

Side and bottom (or side and side or side and top) connections — two-piece chamber (to permit field orientation of instrument)

Alignment micrometer . . . is sturdily mounted, is readily accessible and permits adjustments with minimum disturbance.

VERSATILITY

The proportional controller . . . may be used as a *Transmitter* and can be converted in the field to a

Differential gap controller . . . by simply reversing position of the coil spring and bellows in the proportional unit; or

Proportional-reset controller . . . by interchanging the proportional unit and the proportional-reset unit.

STURDY, COMPACT, ACCURATE MEASURING UNIT

All parts of the *Torque Tube Assembly* are made of a single alloy, individual parts being welded to form an integral unit. Knife-edge bearings support both ends of torque tube. Torque tube housing is removable from mechanism chamber.

Stainless . . . steel tubing *Displacers* designed so that standard control mechanism can be used for all ranges, are attached to the torque arm by hangers with modified-knife-edge hooks. Hanger extensions may be integral or detachable.

Chamber . . . assemblies are compact and light in weight to facilitate handling and installation. Mounting dimensions are uniform for all materials and ratings — and are in whole numbers; on side-mounted types mounting dimensions equal level range.

VARIETY OF TYPES, MOUNTINGS, MATERIALS

Instrument Types include *Proportional, Proportional-reset, Differential Gap Controllers* and *Transmitters;* or any combination of two of these in larger case. *Mounting Types* include top and bottom, side and side or side and either top or bottom, with screwed or flanged connections; also top or side of vessel with flanged connections. Instrument mounting left or right of displacer.

Ratings up to 2500 lbs. ASA.

Materials include iron (14″ & 32″ only), steel or alloy chambers; stainless steel displacers; inconel (or wide selection of other materials) torque tube assemblies.

Ranges — 14″, 32″, 48″, 60″, 72″, 84″, 96″, 120″

Complete details sent on request. Address

ALL HIGH Quality Efficient PRODUCTS

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IN THE PULP AND PAPER INDUSTRIES

CLOSE SPEED REGULATION

wins duplicate installation for RELIANCE engineered paper machine drive...

This new single-motor Beloit paper machine, installed by the Detroit Sulphite Pulp and Paper Company in February, 1952, produces top-quality paper at operating speeds ranging from 450 to 1800 fpm.

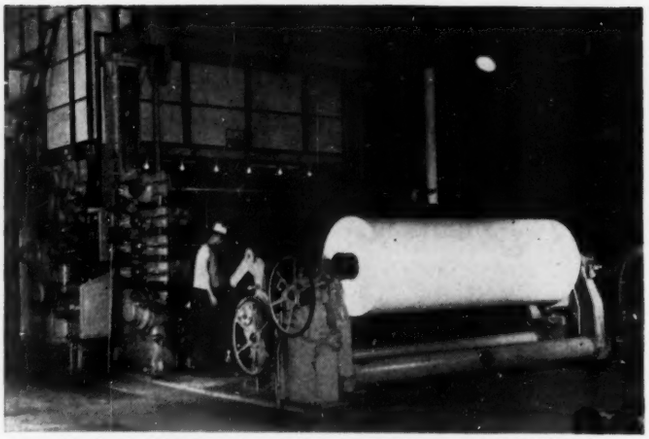
½ of 1% Regulation

Power is furnished by a 300-hp. Reliance Type 'T' Heavy Duty Drive Motor, with speed control by Reliance V★S Drive. Under all operating conditions, over a 4-to-1 speed range, the Reliance drive system has consistently maintained speed regulation within ½ of 1%.

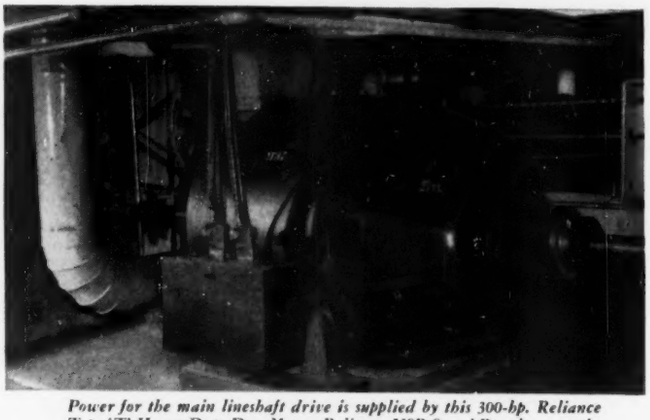
The outstanding performance of this drive led Detroit Sulphite management to specify an exact duplicate for a second machine which has since been installed and now is in full production.

Get Further Details Now!

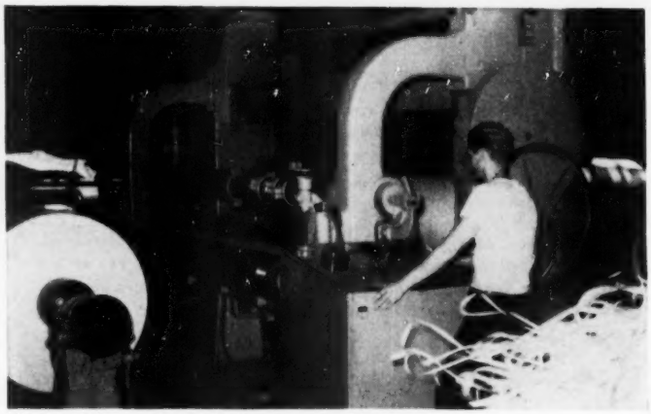
You can cut production costs and improve operation with a Reliance drive on your next machine . . . or on those you now have operating. Write for Bulletin D-2311, describing the Reliance V★S Drive . . . the original all-electric adjustable-speed drive for a-c. circuits . . . or call one of the Application Engineers at any of the 45 convenient Reliance Sales Offices. D-1448-B



Reel end of Beloit single-motor paper machine at Detroit Sulphite Pulp and Paper Company. High-quality paper is produced at speeds ranging from 450 to 1800 fpm.



Power for the main lineshaft drive is supplied by this 300-hp. Reliance Type 'T' Heavy Duty D-c. Motor. Reliance VSR Speed Regulator on the lineshaft maintains speed regulation within ½ of 1% over a 4-to-1 range.



Photographs courtesy of Detroit Sulphite Pulp and Paper Company

Auxiliary drives include this high-speed two-drum winder, powered by a Reliance 50-hp. winder motor. Two other 50-hp. Reliance motors drive the couch helper and the press helper.

Sales Representatives in Principal Cities

RELIANCE V★S DRIVE

RELIANCE ELECTRIC AND ENGINEERING CO.

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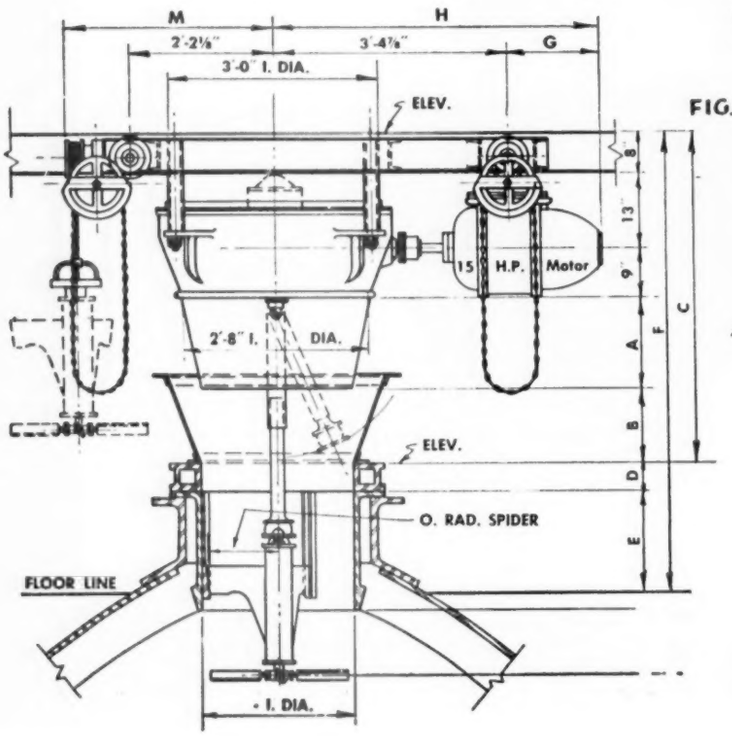
CHEMIPULP—K. C.

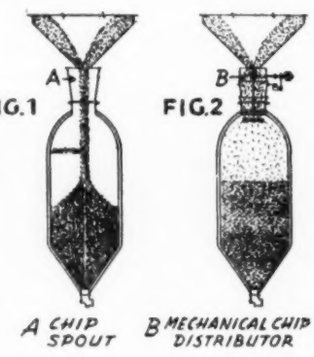
CHIP DISTRIBUTION

¶ During the years, 1928 and 1929, when the Kimberly-Clark Corporation was making mill scale experimental studies of the forced circulation and indirect heating method for producing sulphite pulp, it became evident that complete elimination of temperature differences within any given horizontal plane of the digester could not be obtained unless the method of chip filling was changed. By the normal method of filling a conical pile develops which, because of the slab-like nature of the chips causes development of directional channels between chip layers, all leading toward the central axis of the digester. Naturally any liquor circulating through the chip mass would tend to concentrate, in its flow, along this central axis, and defeat, to some extent, the purpose of forced circulation.

¶ It seemed obvious, then, that a modification of the chip filling procedure of a nature which would assure a horizontal stratification of the chip load, with corresponding development of horizontal interstitial channels would be extremely desirable. This would provide as nearly an ideal means for assuring uniform distribution of the circulating cooking liquor throughout any horizontal plane of the digester chip charge as could be desired.

¶ With this objective in mind a thorough investigation was made of machines available for chip distribution. During the filling process trials were made using machines of all types; namely, those using steam, air mechanical means or combinations of these. In all cases, it developed that a common fault existed; namely, that any given machine would tend to give a planer surface to the chip charge but this surface was only accidentally horizontal (i.e. perpendicular to the vertical axis of the digester). The general rule was to find the chip pile inclined in some one general direction in the digester. Naturally, any liquor circulating





General Assembly
Chemipulp-KC Chip Distributor
CHEMIPULP PROCESS INC.
Watertown, N.Y.

in the SULPHITE PROCESS

through such a chip mass would tend to drift in flow toward the side of the digester having the high points in the pile (with upward liquor circulation). This, it is evident, was no improvement over the normal method of chip filling.

¶ The reason for this faulty performance did not become evident until observations were made from within the digester during the filling period. By following this technique, it was discovered that the chip stream did not enter the digester top nozzle along the central axis nor did it impinge on the distributing mechanism in a uniform, centrally positioned zone. Rather, it would tend to flow down one side of the nozzle and impinge on one side of the distributing element. Obviously, the distributing element would have a corresponding directional effect on the nature of the piling within the digester. Incidentally, the cause of this situation was found to be the fact that chips do not flow from the bin in a uniform delivery from all its zones but rather develop channels from some given zone. And further, this channel flow shifts from one filling period to the next.

¶ With this background of facts, it was possible to build up a mental picture of the conditions to be met in the development of a satisfactory distributing machine and design accordingly. Such a machine of necessity must include two primary elements; namely, a metering device to correct for misalignment and non-uniformity of chip flow from the chip bins, assuring a uniform flow of chips through the machine, and a distributing element to deliver the chips uniformly over the area within the digester. It was found by experience that this latter element should be mechanical in nature, since this type lends itself more readily to adjustment for particular wood conditions than one operating by means of steam or air.

¶ As a result of these experiences a successful, flexible machine was developed which has proven uniformly satisfactory over a period of many years of intelligent application to a variety of working conditions.

¶ Incidentally, it was found that the chip charge could be increased in quantity up to 50% above normal and at the same time insure practically perfect liquor circulation throughout the chip charge. When over 35% increase in chip charge is obtained it becomes necessary to provide flushing the digester with waste sulphite liquor during the blowing time.

★ **This article is the fourth of a series being published by Chemipulp Process Inc. in PULP & PAPER magazine in the interest of generally improving the sulphite process. Correspondence regarding or discussing the articles will be welcomed.**

A LIMITED NUMBER OF A REVISED EDITION OF "CHEMIPULP SULPHITE MILL OPERATION," THE HANDBOOK OF PRACTICAL OPERATING PROBLEMS WILL BE AVAILABLE UPON COMPLETION OF THIS SERIES OF ARTICLES.

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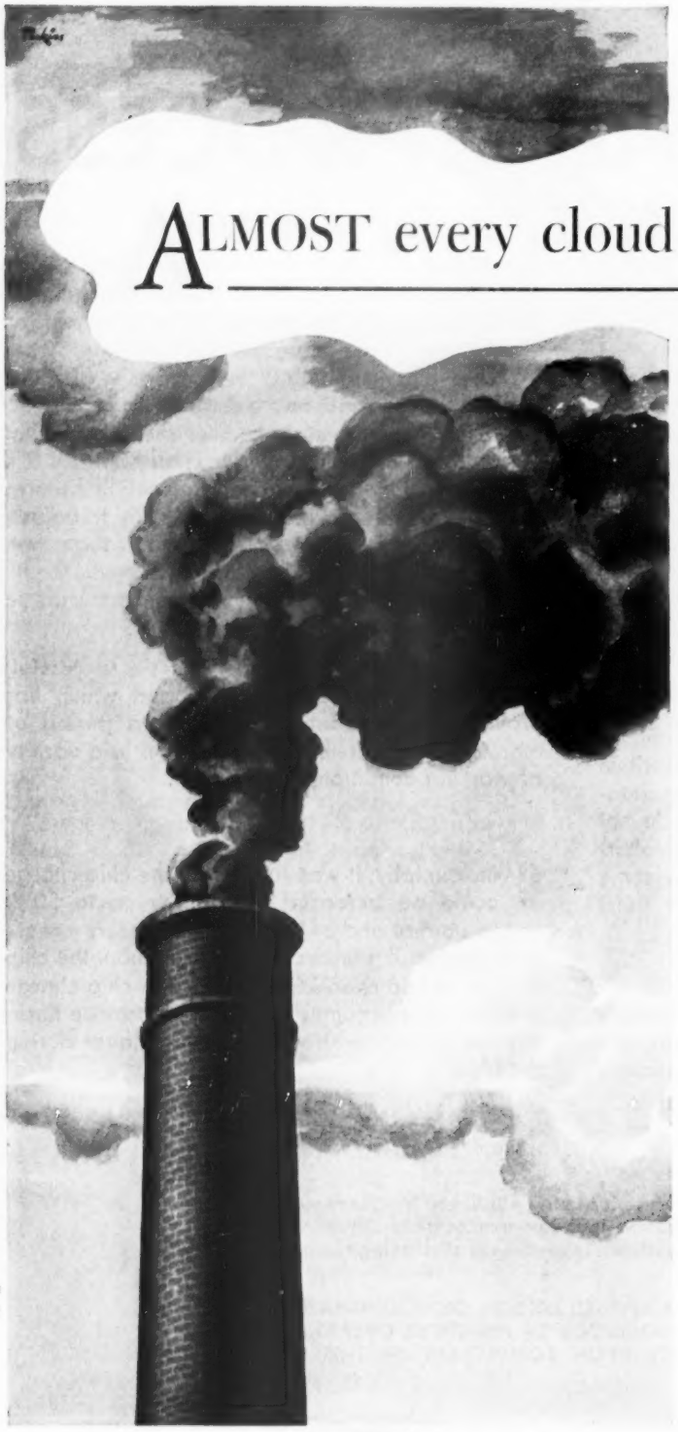


ALMOST every cloud has a silver lining

IN CASES where Koppers-Elex Electrostatic Precipitators can be used profitably, plants have at their disposal the most effective and efficient means known for preventing actual dollars-and-cents profits from 'going up in smoke.' It does this in any one of three ways:

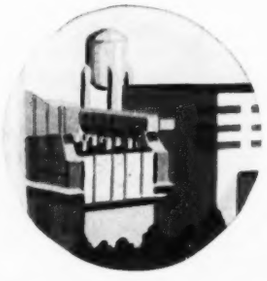
FIRST—recovery of valuable materials entrained in process gases.

SECOND—cleaning of gases for subsequent re-use.

THIRD—keeping of discharge gases well within the limits set by nuisance abatement laws—vital in maintaining good public relations in industrial communities.

Koppers precipitators can work at almost 100% efficiency . . . and operate *continuously*, too. Koppers multiple-chamber design permits the gas cleaning operation to continue uninterrupted in one chamber while another is undergoing inspection or maintenance.

Koppers - Elex precipitators are designed, engineered, fabricated, erected, and guaranteed under one contract by the Koppers Company. For analysis and recommendations relating to your operation, submit details without obligation to: KOPPERS COMPANY, INC., *Precipitator Department*, 248 Scott Street, Baltimore 3, Maryland.



GUARANTEE: All Koppers-Elex precipitators are guaranteed to meet your specifications for efficiency or residual content.

KOPPERS -*Elex* **ELECTROSTATIC PRECIPITATORS**

METAL PRODUCTS DIVISION • KOPPERS COMPANY, INC., BALTIMORE 3, MD.

Engineered Products Sold with *Service*

This Koppers Division also supplies industry with Fast's Couplings, American Hammered Industrial Piston and Sealing Rings, Aeromaster Fans, Gas Apparatus.

ANOTHER E.D. Jones INSTALLATION

A new worm adjusting mechanism is featured in these 4 Jones Majestic Jordans at Weyerhauser's new board mill at Longview, Wash.

ANOTHER E.D. Jones INSTALLATION

These 5 Jones Majestic Jordans were part of the $15,000,000 expansion program at Hollingsworth & Whitney's Mobile, Ala., plant.

Majestic is the word for these Jordans

The Majestic is only one of the many sizes in which Jones Jordans are made. But such is the popularity of this high-capacity work horse that it accounts for 25% of the Jones Jordans sold to date. Like all Jones Jordans it incorporates exclusive features developed from our more-than-a-century of service to paper mills. For more details, ask your Jones representative or write for Bulletin 1007-A.

E.D. Jones

E. D. Jones & Sons Company,
Pittsfield, Mass.

BUILDERS OF QUALITY STOCK PREPARATION MACHINERY

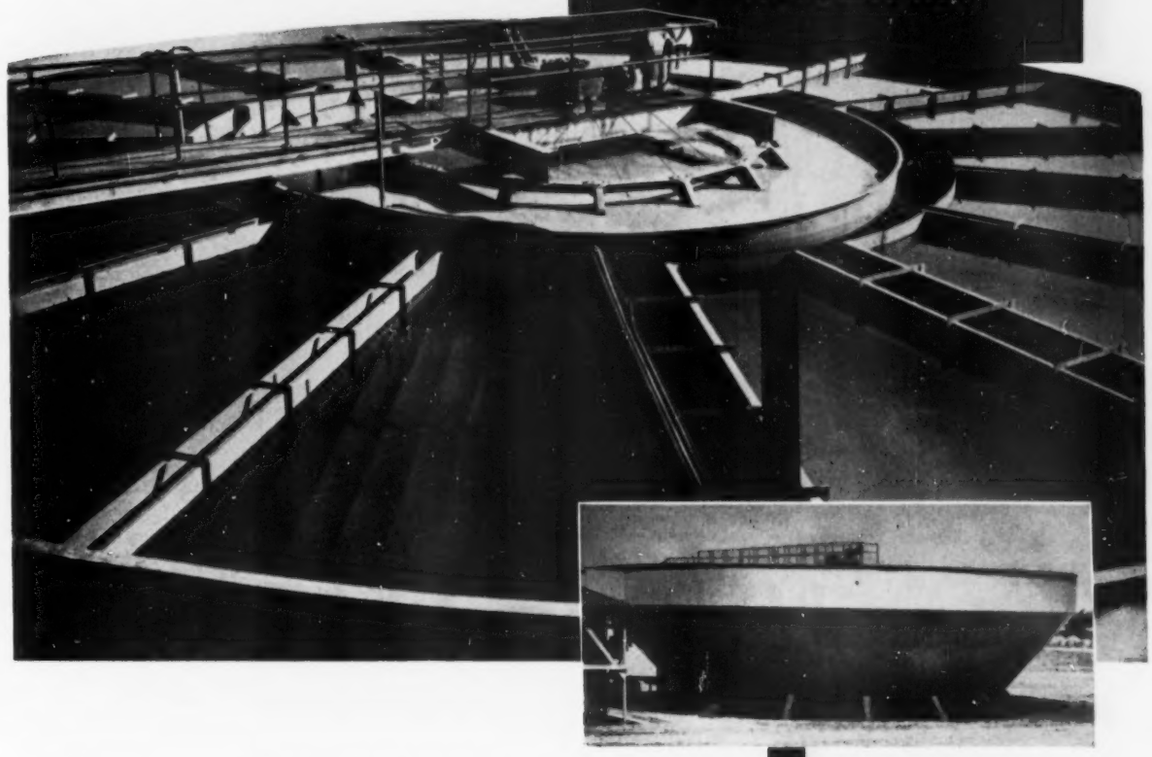
Another

Accelator®

Installation

Proves Again

that highest quality can be obtained at lowest installed cost!



PROCESS WATER of highest quality (low color, iron and alkalinity) was the requirement of this paper mill . . . regardless of changes in raw water. In addition, space and installed cost were important considerations.

On all of these counts – uniform effluent quality, installed cost, and space savings – the Accelator secured the job, just as it has on many other installations. (Accelators are treating more than *one billion* gallons per day!)

Space and installation economies are illustrated in the photographs above. Note how the Accelator tank is shaped for simple support on concrete pad and buttresses. This meant savings in installation costs. Space savings are evident when you consider that this *single tank* combines mixing, coagulation and clarification and can treat 10 million gallons per day!

For more information on how the Accelator can work for you, secure your copy of the 28-page Accelator Bulletin.

Send for informative booklet – no obligation.

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Plants in Chicago and Joliet, Illinois

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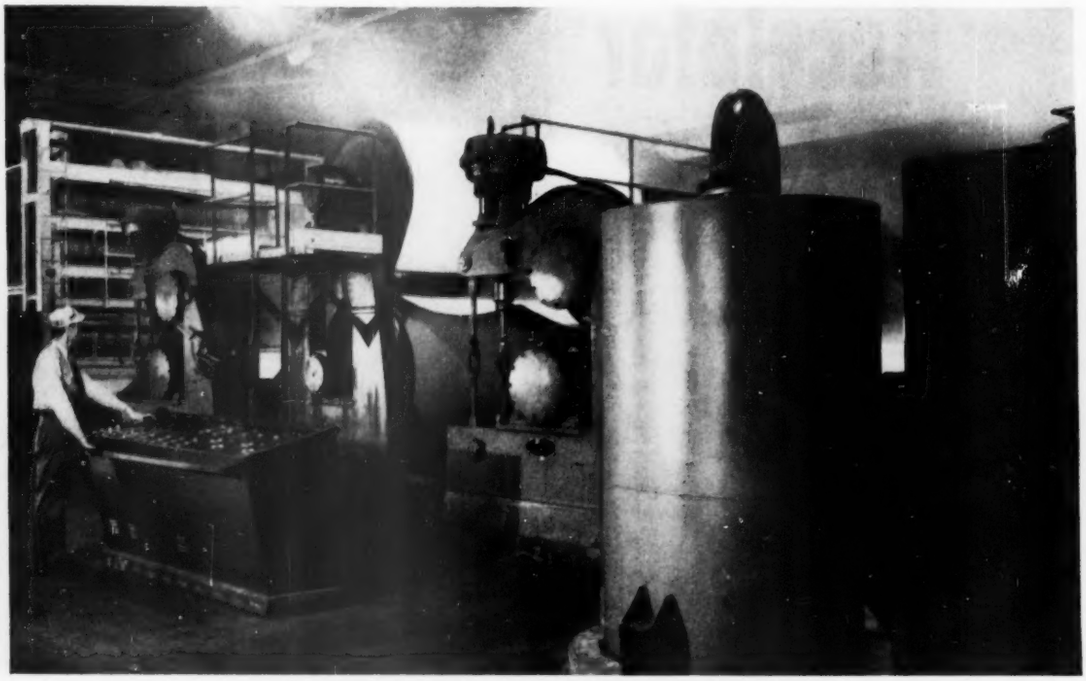
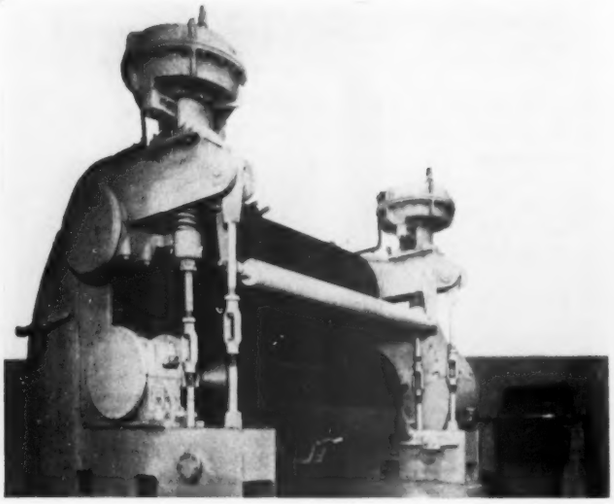
HIGH DENSITY • HIGH PRODUCTION

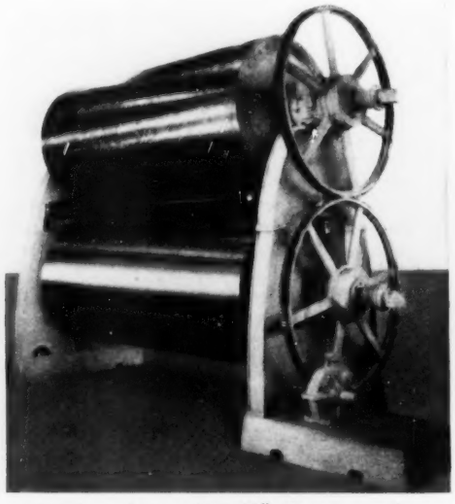


Built to exacting specifications for individual requirements in various sizes up to 156"—for as high as 300 tons per day per machine! Note air-loading for all press rolls.

IMPCO FELTLESS



Main air-loaded press sections with 36" diameter grooved press rolls—shown here from tending side.



View from drive end of 60" diameter pre-dryer section.

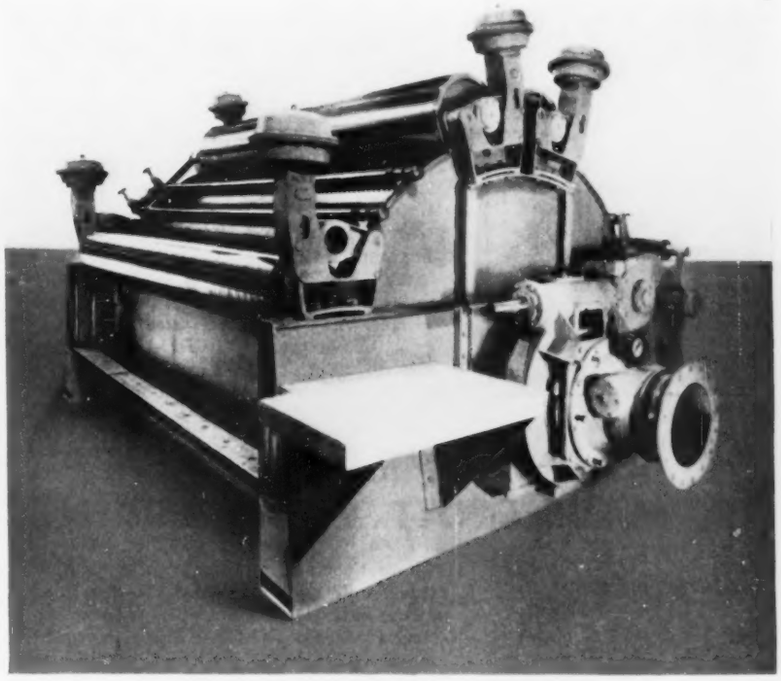
IMPROVED

NASHUA,

RUGGED DEPENDABILITY

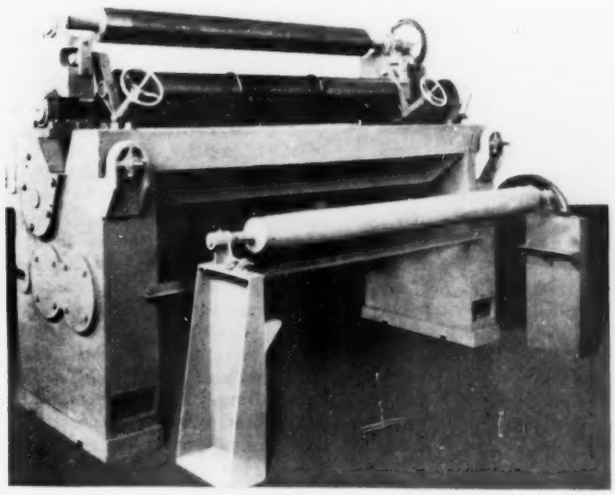
Producing sheet densities in the range of 50% to 60% A.D. on all types of chemical, semi-chemical and ground-wood pulps—the Impco Feltless Wet Machine contains a number of features new to wet machines all combined to give you long-lasting, top quality service.

Air-loading for all press rolls—extra-heavy enclosed herringbone gear drives on the press sections—new inverted type sheet cutters are but a few of the advantages incorporated in this exceptionally rugged feltless wet machine manufactured by Impco.

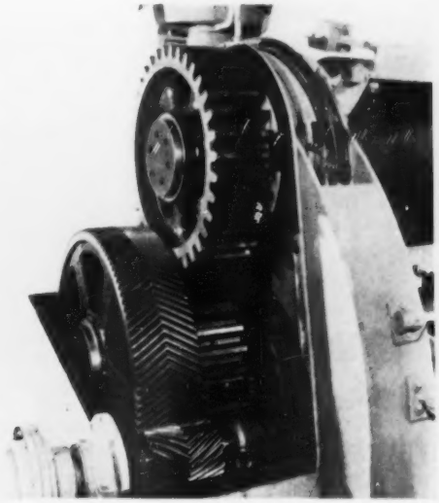


View from valve side of 8' diameter vacuum thickener for wet end showing air-loaded forming and press rolls.

WET MACHINES!



The complete unit can be installed prior to dryer sections or this Impco Slitter and Cutter can follow the final press to produce sheets of any desired size for shipping wet.



Main press drive case disassembled to show rugged herringbone gear and pinion and special long-tooth synchronizing gears.

MACHINERY, INC.

NEW HAMPSHIRE

Sherbrooke Machineries Limited, manufacture similar equipment in Canada

J-30

UNIQUE CONFERENCE –PULPWOOD SECTION

Turn to our PULPWOOD SECTION this issue for an exclusive detailed report by PULP & PAPER about a unique meeting held recently in Chicago. It was called by private industry, to pool the ideas of experts from all over the United States, on ways and means of solving what is regarded as the No. 1 forestry problem of this country.

The problem: *How to sell good timber management for continuing crops and profits to over 4 million owners of small woodlots.*

If this can be done successfully, it would revolutionize the outlook of the forest industries of America, multiplying their potential resources, and opening an era of abundance and high living standards from the products of trees. And it would mean added incomes for those 4,000,000 small owners, too.

WESTERN WOODS TOUR–PULP MEETING

The United States Pulp Producers Assn. is completing plans for its one-day meeting to be held in Seattle, Wash., Sept. 15, while an APPA committee is making preliminary plans for the three-day woods tour of the Forest Policy Committee which will follow the pulp producers meeting, Sept. 16-17-18.

The committee planning the woods tour is headed by Howard Morgan, Weyerhaeuser Timber Co. Committee members include George Drake, Simpson Logging Co.; Edward Stamm, Crown Zellerbach Corp., and Edward Heacock, Weyerhaeuser Timber Co.

Although it has not yet been definitely determined, indications are that the two groups will get together during the banquet following the Pulp Producers meeting on Sept. 15, and will join forces for the three-day tour to follow. Close to 50 tentative reservations have been received by the Forest Policy Committee for the tour.

OUR COVER PICTURE

In our cover picture, JOHN MOMMSEN (left), Grays Harbor, Wash., and W. W. WOODS (right), a Grays Harbor banker, study the record of a thinning harvest—$159 from a half acre. Mr. Mommsen's father, a Danish immigrant, started tree farming 50 years ago in Washington. Around this cover picture is shown a montage of tree farm signs from all over the U. S.

For the story on this No. 1 forestry problem—and No. 1 forestry opportunity—see our PULPWOOD SECTION.

BALDWIN MADE SCOTT VICE PRESIDENT

PAUL C. BALDWIN, who has been elected Vice President of Scott Paper, heading up west coast operations. He is based at Everett, Wash.

Paul C. Baldwin, who in his career has been one of the youngest superintendents and one of the youngest mill managers in this industry, has been elected vice president of Scott Paper Co., in charge of West Coast operations, which include mills at Everett and Anacortes, Wash., and Empire, Ore. He is 38.

His headquarters are in Everett, Wash., where Scott is building a two machine tissue mill with biggest tissue machines in the industry, in connection with its big Soundview Pulp Division there, acquired in the 1951 merger.

Mr. Baldwin moved his family to Everett from Chester over a year ago. He will continue to serve there under direction of Umberto M. Dickey, of Seattle, Scott director and senior officer on the Pacific Coast, and former president of Soundview.

Mr. Baldwin, graduate of Syracuse U., and the Institute, with Masters and Ph.D. degrees, joined Scott in 1940 as assistant in the pulp lab at Chester. He became technical director and in 1943, ten years ago, was made paper mill superintendent. Just four years later he became Chester mill manager. In 1950 he became assistant to the general operating manager and in 1951, after the Soundview merger, became assistant vice president.

Japanese Firms "Invited" to Join Alaska Co.

A report published in Tokyo and transmitted to this country by Associated Press reports that 32 pulp and paper companies of Japan, and two lumber firms in that country, have been invited to form a single Japanese company to build pulp and lumber operations in Sitka, Alaska, utilizing the U.S. Forest Service timber in that area.

According to the report, "plans call for borrowing $30,000,000, probably from the U. S. Export & Import Bank for capital and operating funds."

In spite of these reports widely published in U. S. daily and trade press, PULP & PAPER has been told by R. E. McArdle, chief, U. S. Forest Service, that he has had no contact with Japanese interests in connection with Alaskan timber since the visit of a Japanese technical mission early in 1953. And he affirms again the policy of the Service that it can only deal officially with legally-constituted U. S. companies on the basis of open bidding, and that it only grants timber rights for manufacturing purposes, not for shipment of raw materials. So that any shipments from Alaska would have to be lumber and/or pulp, manufactured by a company organized in the United States.

Furthermore, an official of the U. S. Export-Import Bank has told PULP & PAPER that there is no possible way that any foreign government or group could borrow or use its funds to finance any manufacturing project in the U. S. or its territories.

U. S. private industry has been disturbed at the possibility of the American government loaning money to build new mills when there is now ample supply of pulp and lumber available from existing American mills. Also it was pointed out that this is only one of six self-sustaining pulpwood units in government-owned timber in Southeast Alaska, as set up by the Forest Service, and it might be permanently lost to American producers and consumers.

COATING CASE DECISION UPHELD

The Circuit Court of Appeals in Chicago on July 6 upheld the decision a year ago in U.S. District Court, Eastern District of Wisconsin, in favor of the defendant, Kimberly-Clark Corp., over Consolidated Water Power & Paper Co. and Peter J. Massey.

It was undecided whether Consolidated would make a further appeal.

This is a long-standing legal case involving a basic machine coating patent which, as a matter of fact, already has expired. The only possible effect is that if Consolidated and Mr. Massey, the inventor should eventually win this case, it could involve payments of money by Kimberly-Clark to Consolidated.

Otherwise, there is no practical effect and it has no bearing on the many subsequent machine coating patents, some of which are in effect today. It should have no effect on other companies making machine coated paper and any such companies can quickly clarify their position by consulting their own attorneys.

The only patent involved—U.S. No. 1,921,368—expired Aug. 8, 1950. This was the end of the 17-year patent life, and longer than that since Mr. Massey won support of former President George W. Mead of Consolidated, now retired, to introduce his high speed machine coating process in Wisconsin Rapids. Consolidated and other companies own many subsequent coating patents in this country and abroad.

BOARD ASSN.'S 4-POINT PROGRAM

COMMUNITY RELATIONS – – SAFETY – – QUALITY – – MERCHANDISING

By Marvin W. Swaim
President, National Paperboard Assn.
First Vice Pres. and Gen. Mgr., Alton Box Board Co.

THERE MAY BE a question in your mind as to why we should concern ourselves with the general public's lack of knowledge of paperboard. True enough, we don't sell our paperboard to the general public. But our business depends, in the final analysis, on public acceptance.

Beyond this consideration pertaining to our own industry there looms the fact that all industry is on trial. Paperboard, like all other segments of industry, is at the stage when it must make itself understood to the general public.

How can we do this job of improving our community relations? We can do the job by working in each plant locality to inform the general public about paperboard and its products and their important place in American life. At the same time we will be helping our own firms in our own communities, working together toward the understanding that is essential to the survival of our American way of life.

My second point concerns the safety of our mills. After we have aired out our industry house and given people a look at it, perhaps we should check it to be sure that no one will get hurt going through.

I am sure you have seen from your own experience how industrial accidents can affect a firm's relations with the community. You know also that accidents complicate our production problems, increase our costs and lower our employe morale.

Quality is my third point. It is the element that enables us to extend the services of paperboard and continue our industry growth. It is the predominant factor in winning public acceptance for our product. Finally, quality is the field in which we can discharge our responsibility to ourselves; pride of craftmanship brings a kind of satisfaction found in no other way. In this sense, quality is its own reward.

These opportunities I have mentioned can go a long way toward preparing our industry house for the months to come. But I have not mentioned the foundation of that house. It must be strong or all the rest of our work is useless. The foundation is merchandising. It must be built on solid rock—not on sand.

Every action individually taken, every part of our business structure focuses finally on the actual merchandising of our product. Engineering, production, accounting—all of these are important. But they are important only as they help us to merchandise paperboard so as to make money doing it. In the field of merchandising, as in the other matters I have mentioned, I think there is opportunity for improvement.

Without question, our merchandising has been successful. Our industry, broadly speaking, has been a prosperous one. But have we made the most of our capabilities along this line? Have we put forth our

MR. SWAIM, who presented this program at Santa Barbara, Calif., meeting of National Paperboard Assn.

greatest possible efforts to acquaint our customers and the public—who are the ultimate consumers—with the services of paperboard? Have we explored all possible fields for merchandising our products?

If merchandising is the industry's foundation, then our individual profits are the mortar that holds the foundation together. Unless we earn reasonable profits, we cannot be strong and grow as we should. Stagnation would surely follow. This is one point which really should concern not only us but our employes, our communities, our stockholders and our customers. All of these groups have a big stake in our continued growth. They can have security only if we are secure.

I feel sure that we can all take advantage of our opportunity to go that extra mile—to improve our community relations, the safety of our mills, the quality of our product, and the effectiveness of our merchandising. Contrary to the old saying—that opportunity knocks but once—E. F. G. Gerard writes:

"Whoever claims that I knock but once
Is either lazy or a dunce.
I'm with you *always*, friend, *take heed*!
Your future's *golden*—GO, *succeed*!"

RUSSIA MOVES INTO PULPWOOD SCENE

POTENTIALLY one of the most significant occurrences in international woodpulp trade was the recent participation of a representative from the Soviet Union in a technical meeting of the United Nations Economic Commission for Europe to discuss Europe's timber situation. V. N. Nitchkov, general manager of the Soviet Union's timber export-import monopoly, was the representative, and it was the first time Russia had ever taken part.

As reported in the *New York Times*, Mr. Nitchkov not only freely supplied statistics on Russian timber production (500,000,000 cubic meters for 1951), but indicated that the Soviet wanted to be included in the overall European timber planning.

World trade significance lies in the fact that a recently-published study by the UN Economic Commission and the Food and Agricultural Organization shows that with continued growth in the European gross national product, by 1960 there will be a deficit in pulpwood production for Europe's own demands. So that if Europe is to maintain its net export balance in woodpulp of approximately one million tons annually, it would have to do so at the expense of its own consumers, or else would have to find new sources of wood and make better utilization of present supplies.

The UN report shows that by 1960 Europe can only be self-sustaining and maintain its net export balance in woodpulp if deficiencies in pulpwood are met by heavy imports from the Soviet Union. Participation in the UN meeting may indicate Russia is setting the stage for the beginning of this trade.

Menasha Celebrates 100th

Menasha, Wis., nationally known papermaking town, celebrated its 100th anniversary in early July. It is located where the Fox River flows into Lake Winnebago, with a population of about 1,000.

It boasts five paper mills—Marathon Corp., which has two Fourdriniers here and a converting plant; John Strange Paper Co., founded 65 years ago and a pioneer kraft mill of America; Geo. A. Whiting Paper Co.; 66 year old Gilbert Paper Co., and Wisconsin Tissue Mills; A converter, Central Paper, and its owners, Geo. Banta Publishing Co.; also Edgewater Paper, another converter.

Frank N. Youngman Becomes President of St. Helens

FRANK N. YOUNGMAN who becomes President of St. Helens Pulp & Paper Co., St. Helens, Ore., as result of merger with Crown Z.

The recent merging of interests between St. Helens Pulp & Paper Co., St. Helens, Ore., and Crown Zellerbach Corp., has resulted in a few top-level personnel changes. Frank N. Youngman, C-Z vice pres., at Portland, has been named pres. of the St. Helens organization, succeeding Max R. Oberdorfer who resigned as pres. and gen. mgr. Ray J. Schadt, formerly manager of C-Z Port Angeles, Wash., mill, has been made a director and resident manager of St. Helens. Carl E. Davidson, Portland, became sec., Carroll C. Eckert, formerly C-Z officer manager at Los Angeles, is treas., and office manager.

A WASHINGTON PLAN

INVITE GOVERNMENT MEN TO VISIT MILLS?

By Richard A. McDonald

Former Director of the National Production Authority, Washington, D.C.
Director and former Executive Vice President of Crown Zellerbach Corp.

Questions raised in the May feature article of PULP & PAPER *magazine, as to the industry-in-government set-up that should be created in Washington, D.C., under the Eisenhower administration, touched on a subject very close to the heart and mind of Richard A. McDonald, who was a recent director of the National Production Authority in the national capital. He served through 1952 in several high government posts, finally heading up all of NPA. Some of his views on the subject of business and government cooperation were expressed in one of the major addresses given at* "Paper Week" *in New York this year.*

Views of other industry leaders on this subject are reported in another article, following this one.

1. SHOULD THERE BE retention of a Forest Products Industry division in the Department of Commerce? If so, what should be its functions? Should it be staffed by an industry man at its head? How should this man be selected? How long should he hold position in government?

I think the answer here is pretty self-evident. Consider: As Mr. Eisenhower has pointed out, we are in world danger for years ahead; I think the welfare of our industry and of the nation requires that we have a "hard core" of people in Washington who know our industries, their potentials, and the people in them. Further, we can see that, whichever party is in power, government policies and activities have a major effect on industry and business and this is bound to continue. Since we do not want to hide our heads in the sand, then of course we want a Forest Products Industry Division in Commerce. My experience has taught me the government people are anxious to get the advice of industry.

As to the division's functions, let me say emphatically that *we have to tell them* what we think is desirable (but remember a bureaucrat is being watched by cabinet officers and by Congress and the Budget Bureau and therefore can't perhaps do everything we would wish for them to do). I mention the following functions:

a. Provide us with statistical services as we may request. This would be statistics on our own industries *and* on others as we may request.

b. Inform us on policies and administrative measures of the government so we can better understand our own activities in relation to the government and the rest of the economy.

c. Bring to the councils of the Administration the facts of our industries and the views of its members so that the Administration's legislative and administrative programs are not developed in vacuums.

R. A. McDONALD, former NPA Director, is organizer and a Director of East Texas Pulp & Paper Co., and continues as Director of Crown Zellerbach Corp. He was its former Exec. V.P.

d. Serve as the "hard core" of know-how in the event that defense needs impose controls and thereby give us the confidence that a lot of "long-hairs" won't be thrown in the breach because there is no other real alternative. Workable controls, I found, require ability and understanding of government and industry.

Should be Headed by Career Man

The division should not be headed by an industry man but by a career civil servant, for the following reasons:

a. If we set it up with an industry man in charge and then there should be a change of administrations, where would we be? Chances are we would have to start all over with an unknown and that which we would have painstakingly built up would probably "go down the drain."

b. If we want a strong division, then let us do as we do in industry, namely, provide adequate rewards and top jobs for those who perform. Let us not create a feeling on the part of career people that we do not have confidence in them.

c. Most industry men would not stay long enough to assure continuity of leadership and that would hurt us rather than help us.

I would suggest that the deputy director of the division be an industry man serving without compensation (if the Administration and Congress will permit). There should be two industry men in the division at all times; one from lumber and one from pulp and paper. We should create a cycle whereby the first man goes for six months; the first three months he works through the division and serves as deputy director his last three months. The second man goes in three months after the first man; while the first man is deputy, the second man is working through the division and when the first man leaves, the second man moves up as deputy for three months, and so on. These men should be in the junior executive class such as now attend the Harvard Business Course.

This system would give us good representation at a fairly high level (enough to count and let us be heard); would give our people good training, breadth and better understanding; yet would not injure leadership in the government or keep our men away too long.

The Secretary of Commerce should appoint the Division director (I believe only he could do so legally) after consultation with the industry. The Secretary, working with appropriate people on his staff, could schedule the flow of deputies from the industry for, say, the next 18-24 months through consultation and cooperation with the industry. If this idea were accepted, a small committee from the industry could sit down with Commerce officials and work out specifications, timing, and details on the flow of industry men.

Should There be an Advisory Group?

2. If a Forest Products Industry Division is retained, should there be an Industry Advisory Committee to function with it? How should these men be selected? What suggestions do you have for improvement of action of Advisory Committees with government departments?

On this question, let me spell out point by point which I would suggest:

a. By all means have a strong Advisory Committee operation.

b. Have Commerce organize and be the focal point for the Committee but have only one Industry Advisory Committee for the whole of the government. For example, the Forest Service and the Pentagon do *not* also create Committees from our industries but use the single established committee.

c. The government should select committee members which should be a good-sized Committee with wide representation. Each member should serve two years only and start so that one half would be replaced each year after the first year.

d. Permit trade associations' secretaries and our trade publications to attend meetings but probably have them only as observers until we get a clear picture of just where the trade associations' secretaries can function best. The associations and publications would be permitted to report the proceedings.

e. The proceedings of all meetings would be reported by the Commerce Department to the industry members and to others who might request copies of the report.

f. The Committee would meet as occasion demanded but no less often than once every six months. Every four

months would be better.

g. The agenda would be prepared by Commerce after seeking the views of each Committee member and other government departments as to what should be on the agenda—and the agenda would go out in advance. Here is where an association secretary might be of great help.

h. Each meeting would be at least one full day (better two days) and would be arranged so that part of the program would be the government hearing from us; the other part would be us hearing from the government.

i. Although Commerce would conduct the meetings and be responsible in general for the Committee's operation, Commerce would not monopolize the Committee. Commerce should bring before the Committee various government department heads who would analyze for us various policies and problems facing the administration. Imagine with me, for a moment, the following agenda spread over two days composed of a series of sessions:

Example Agenda

From the Government to the Committee:

1. Review of Basic Administration Philosophy—Secretary or Ass't. Secretary of Commerce.
2. Business Outlook for the next 12 months—Dept. of Commerce.
3. The Administration's Tariff Program—Commerce and State.
4. Economic Aspects of the Defense Program—Pentagon, Commerce, and Budget Bureau.
5. Tax Policies—Commerce and Treasury.
6. Developments in Forestry Policies—Forestry Service.
7. Anti-Trust Developments—Justice and FTC.

From Industry to Government Representatives:

1. What Industry Needs Statistically from Government—Committee Member.
2. Readiness of the Industry to Meet War Needs—Committee Member.
3. How to Better Canadian Relations—Committee Member.
4. Legislative Suggestions and Considerations—Committee Member.
5. Free-for-all Session—Committee Members.

So much on the Advisory Committee. Obviously I want it and I want us to join the government and pour some vitality into the Committee's operation so that it acts as a binder.

What Publications are Needed

3. What government publications from Commerce do you consider valuable—Survey of Current Business; Foreign Commerce Weekly; Pulp and Paper Industry Report?

The Survey is invaluable and is a *must* to be continued. It provides crucial economic data that is simply not available elsewhere. It is a real professional performance and we should *demand*, if necessary, that it go forward. The Foreign Commerce Weekly is far less important but I suspect is quite valuable to the foreign traders. With our hope for an expanding foreign trade, I should not yet be willing to throw it overboard but it is close to the margin. The Industry Report I would keep but we in the industry should tell Commerce how to improve it in order better to serve us. I think its statistical series are worth having and a number of the articles have been worthwhile, although this is by no means consistent. It can become more valuable to you, and all the industry, if we succeed in building a closer relationship.

Send Government to Industry!

I do have one other idea that I wish the industry would explore. We talk about sending industry men to government but no one talks about government men coming to industry. Why not an arrangement (work out a program) whereby the promising career men would rotate through various parts of the industry for six months at a time? Let us have Commerce, say (or the Foresty Service, or both), each three to four months give us one of their "comers" and he could go to two or three different pulp and paper companies for a month at a time; to Appleton at the Institute for a week; for another month he could visit the trade associations and perhaps take some time simply to study on the economics of the industry. He should spend some time with the machinery manufacturers and learn something of their problems, and so on. Wherever he went there would be a continuing exchange of information and a building of confidence between a government representative and industry people. I would suggest that the man's own department would continue to pay his salary and the industry pick up the travel and expense check. Obviously the various members of the association would need to join so that the rotation and the burden was spread equitably. I feel reasonably sure that if we proposed this to Commerce, we could sit down and work it out in detailed form in fairly short order. Moreover; I should like to see *our* industry be the first to make this concrete proposal and demonstrate that we are prepared to do something more than just yap about better government-industry relations.

LEADERS SUGGEST HOW TO HANDLE INDUSTRY SET-UP IN GOVERNMENT

THE FEATURE ARTICLE in the May issue of PULP & PAPER describing "*The New Climate in Washington*" and posing some serious questions as to the most desirable form in which industry and government cooperation should take, has brought numerous viewpoints and constructive suggestions from pulp and paper leaders.

These are views from industry leaders, who have had government experience, as well as from several association secretaries and officials, who, likewise, have had much to do with Washington in past and present.

These pulp and paper industry opinions, addressed to this magazine as a result of that May article, are timed with a recent announcement by Assistant Secretary of Commerce James C. Worthy on the reshaping of Commerce working policy. He announced it is intended to make it a service organization for business, with industry advisory committees and industry men serving on divisional industry staffs.

D. Clark Everest, Benton R. Cancell and Richard A. McDonald, all of them leaders in this industry who have held top positions in organizing and directing government wartime and defense agencies, were among those who expressed views and made constructive suggestions in letters to PULP & PAPER. Mr. McDonald's views are expressed in the preceding article.

Mr. Everest, chairman of Marathon Corp., was one of the early World War II directors of the newly formed WPB Pulp and Paper Division. Mr. Cancell, manufacturing vice president of Rhinelander Paper Co., was an important figure in war years in government activity, taking a leading part in U.S.-Canadian defense negotiations involving this industry, also

D. CLARK EVEREST (left), Chairman of Marathon Corp., and BENTON R. CANCELL (right), Vice Pres. of Rhinelander Corp. They speak from experience heading industry agencies in World War II in Washington.

in sparking war pulpwood production when it was critically needed, and as late World War II Chief of WWB's Forest Products Bureau.

As noted in the preceding article, Mr. McDonald, organizer of the new East Texas Pulp and Paper Co., past executive v.p. of Crown Z, and still a director of Crown Z, was recent director of the National Production Authority.

This is how other industry leaders expressed views about the relationship of pulp and paper with the Department of Commerce, in particular:

Should F.P.I. Be Retained?

1. *Should there be retention of a Forest Products Industry Division in Commerce? If so, what should be its functions and how it should be staffed?*

One association secretary flatly says he sees no need for a Forest Products Divi-

sion in Commerce. "I do believe," he says, "that the functions which such a division has provided as a liaison agent between government and industry in the past might be well obtained by one of its regular personnel. Then, if an emergency arose which justified an expansion of this function, a Forest Products Industry Division might be quickly set up."

Another association executive, with extensive experience in government work, feels there is little in common among the forest products industries except wood, so that instead of a Forest Products Division there should be a small Pulp and Paper Section, reporting directly to the policy level of a Bureau of Industry Divisions.

"The peace-time head of the Pulp and Paper Section," he says, "should be a permanent civil service employe. Industry apprentices, selected by the industry's trade associations, should be sent to Washington for six-month periods to serve as consultants to the civil service director of the Pulp and Paper Section. In the event of an emergency, these trained consultants would be a nucleus from which a new WPB could be staffed. The functions of the Pulp and Paper Section would be (1) to answer inquiries about the industry, primarily from people who do not belong to organized trade groups, and (2) to represent industry's viewpoint in all interagency discussions that pertain in any way to pulp and paper."

The balance of those writing to PULP & PAPER were in agreement on retention of a Forest Products Division, with the following being typical expressions of opinion:

"We feel that there should be a Forest Products Division but it should perform only those functions that cannot be done by industry," says the secretary of another association. "We believe that if it is possible, an industry man should serve as its head, on a w.o.c. basis, and the head of the Division should be rotated about once each year. This would tend to acquaint industry with government procedure and would bring some industry influence into Washington. . . ."

"The Division should confine itself entirely to statistical and economic studies as a guide to both industry and government divisions and bureaus concerned with forest products," believes B. R. Cancell of Rhinelander. "It should be headed by a qualified person from one of the forest products industries and such a man should spend not less than one year on the job, and two years would be preferable. A committee from APPA, and the National Lumber Manufacturers Assn. could do the job of selecting personnel. . . ."

Mr. Everest of Marathon Corp., and one of the elder statesmen of the industry, told PULP & PAPER: "The division should be a continuing agency and deal with all factors which were under its direction in NPA, including all 'forest products,' and, inasmuch as the pulp and paper industry falls within this category I would think it advisable to have it headed up by a man who has contact with the industry . . . I do not necessarily agree with the idea that we should change that man every six months or after some short period. I would think it better if he were a man who had been connected with industry and accepted a government appointment. . . ."

An Eastern paper company executive said: ". . . I believe strongly that there should be a retention of the Forest Products Industry Division in Commerce and that such a division should be headed up by an industry man. The selection of the individual is always a difficult problem, not because there are not sufficient capable men, but because the individuals and the companies are reluctant to serve the government when no real emergency exists. Probably the Industry Advisory Committee could form a small committee of two or three men to make the selection and persuade him to serve. . . ."

Another association executive said: ". . . I think there certainly should be a Forest Products Industry Division in Commerce. As a matter of fact, the pulp and paper industry by itself is of sufficient size and importance to the country to justify a Pulp and Paper Division. I think there is much to be done both by way of keeping industry informed of trends and of government thinking, and keeping government informed of problems and developments in the industry. This job has sufficient potential to keep at least one industry man fully occupied in Washington.

Should There Be An Advisory Committee?

2. *Should there be an Industry Advisory Committee, and how should it be selected?*

Generally speaking, all those expressing opinions on this subject were in favor of an Industry Advisory Committee, although some suggested an independent advisory committee for pulp and paper similar to the Pulp and Paper Industry Council. It is said that Secretary of Commerce Weeks has endorsed this council, with whom he has met to discuss major problems of this industry. Some typical comments on Industry Advisory Committees follow:

". . . It seems to me that the work of the Advisory group had much to do with the satisfactory solution of many of the industry problems during the war years" . . . from an association secretary.

". . . Industry Advisory Committees are essential and the men serving on such a committee could be selected by the Board of APPA. In my experience in Washington, I believe the Advisory Committees served an excellent purpose and the only improvement I can think of would be to allow association men to serve . . ." from an Eastern paper executive and former government official.

" . . . I think it would be well to have an Industry Advisory Committee and that the representatives on that committee be selected by the various associations so as to represent, in the case of the paper industry, all the grades of pulp and paper. It strikes me that heretofore the Advisory Committees have been more or less 'window dressing' . . ." from Mr. Everest.

". . . This committee should be purely advisory in its function and with no semblances of authority in any form. It should represent the forest products industries geographically by size and by production. Personnel is best picked for such a committee by the head of the division and his attorney who is a regular government employe. The committees are valuable in direct proportion to the caliber of personnel on the committee and the head of the division, how much the head of the division knows about government workings and how close to regulations they can work without getting in trouble; and above all the blessing of the Secretary of the Department is needed so that certain information can be freely imparted to the committee. In such cases, however, members of the Industry Advisory Committees should obtain regular FBI clearance and should be under oath as to secrecy of information obtained . . ." from Mr. Cancell.

"I believe there should be an independent Committee for Pulp and Paper only, similar to the Pulp and Paper Industry Council. Selection of personnel for this committee should be left to the industry's organized trade groups, with non-member representation arranged by government. The Advisory Committee should meet only when there are specific matters to be considered that are within the legitimate scope of peace-time government action . . ." from a former government official.

"In the past the government has usually reserved the selection of Industry Advisory Committees to itself after consulting so-called leaders of the industry. I wonder, however, whether such committees might not well make use of established industry groups which are set up by trade associations to represent the industry. For example, the forest products industry might well be represented by the Forest Industries Council, which has represented on it men from the National Lumber Mfrs. Assn., APPA and the American Pulpwood Assn. . . ." from an association secretary.

What Publications Are Valuable?

3. *What publications from Commerce do you consider valuable?*

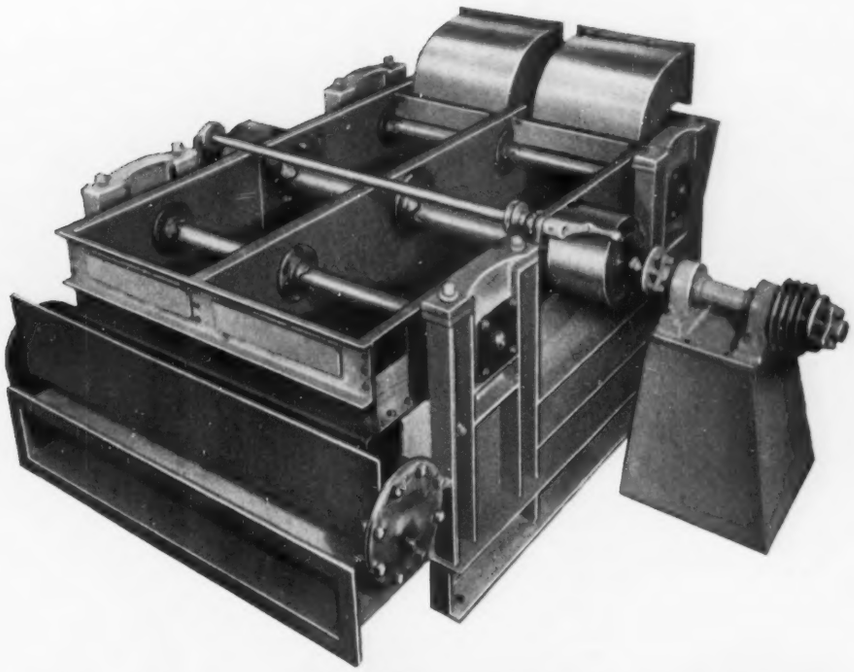
Publications considered of particular importance by the industry men and mentioned in their letters include: Survey of Current Business, Foreign Commerce Weekly and Pulp and Paper Industry Report. Specific comments were as follows:

". . . We do use the Pulp and Paper Industry Report and consider it very valuable, although I do not refer to the Survey of Current Business or the Foreign Commerce Weekly . . ."

". . . All these publications serve a useful purpose and should be continued . . ."

". . . We do need and do use Census data since this data serves as bench marks and also to inform industries elsewhere about the growth and importance of the pulp and paper industry. It does occur to us that most of the government publications are a little out of date by the time they are published . . ."

"With regard to publications, we receive only Pulp and Paper Industry Report which we think is excellent and that Roy Neubrech is doing an excellent job with this. He has a good understanding of the industry and is sympathetic to its problems and points of view, and knows and has the confidence of industry leaders."



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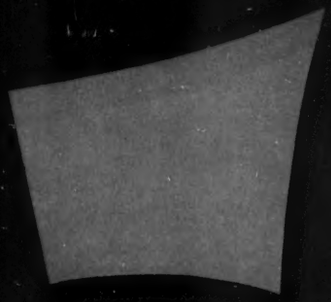

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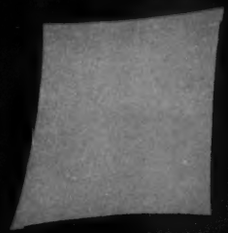


A Hot Question In Atlanta

CAN 'OLD DOG' BE TAUGHT NEW TRICKS

A DRAMATIC HIGH POINT of the Superintendents National Convention in Atlanta in June came during a fleeting ten minutes of lively discussion that climaxed the "Forum on Industrial Relations."

The question—"What is this industry going to do with the old-fashioned superintendent who can't or who won't learn the new ideas in employe relations—human relations?"

President Ed J. Gayner III of Brunswick Pulp & Paper, a Scott man with 30 years in that company himself, working up the ladder, "counted the house" and he said only 102 of the 490 men registered for the convention were in the room when this, and other similarly frank questions, were asked. But even among that 102, chances are there was a percentage of "old-fashioned" superintendents sitting right there in the Biltmore's Georgian Ballroom even though no red faces were spotted.

But there was feeling—sincerity—poignancy, too—in the quickened discussion which that hot question fired up.

The answer of one vice president: "This is the heart-breaking part of industrial relations. We try to change the habits of the old type superintendent. But if we can't, we either have to fire him, or wait out his retirement. A few firings usually wake up the others. We think it is more charitable to take care of our more than 5,000 employes than to let a few of these old timers block progress."

The answer of one mill manager from the floor: "We are not looking for the type of boss, anymore, who got there by licking everyone else. We owe these old-timers an obligation to see to it that they fit into the new scheme of things, if we can possibly teach them."

The answer of another vice president, also of one of the biggest companies: "If he learned how to make good pulp, he can learn something else, too. We have 7,000 employes—our management conference program is important. We find that if one of our old-timers can subscribe to the new ideas, he makes a good teacher for the others. This has been a successful technique with us."

Other comments:

"Today some of these old timers basically fear the new responsibilities they face. They really don't want the job thrust on them. It is a kindness to save their faces some way, and move others in."

"One trouble with the old timers is they are scared of the supervisor's tests which we give. But when they find most of the tests are based on common sense, they come out of them satisfied and relieved."

The panel for this session was composed of:

Harry Dunning, vice president of Scott Paper, who makes over a score of illustrated talks every year to Scott employes from coast to coast, telling them "How We (the company) Are Doing"; Andrew J. Miller Jr., recently made a vice president of The Mead Corp., and their industrial relations chief for all mills; Don M. Rochester, secretary for the community relations program for APPA; and Robert D. Gidel, senior engineer, industrial department, National Safety Council, Chicago. Chairman was Lee Bauer, Ecusta Paper Corp., manufacturing manager.

ED J. GAYNER III (left), President, Brunswick Pulp & Paper Co., who told Superintendents at Atlanta that only 20 percent attendance of men registered at Industrial Relations session "was a great disappointment to me." His talk urged better meeting attendances.

GUNNAR NICHOLSON (right), Executive Vice President, Union Bag & Paper Corp., told Superintendents his company requires men sent to meetings to write reports. He also predicted that buying of wires and felts in future would be determined by test requirements and superintendents will not have to spend very much time determining which are best.

Tornado Near Atlanta— Supts. Had Their Own

A tornado hit a town just 65 miles from the Superintendents convention in Atlanta while that meeting was going on. But the superintendents had some hot blasts of their own—and it wasn't from the 99 degree temperature in Atlanta.

The Superintendents received some frank and unusual advice on very personal matters. Some discussions are reported in this article for the first time. Some of it came snapping and sparking in a question period of an industrial relations forum.

This article reviews some cogent comments by:

Reuben Robertson, chairman of Champion.

Gunnar Nicholson, exec. v. p. of Union Bag.

Ed Gayner, president of Brunswick.

Harry Dunning, vice president of Scott.

Andrew Miller, vice president of Mead.

Scott Brings 50 a Year to Chester

During discussion, Mr. Dunning told how Scott Paper Co. brings 50 selected men each year from all its operations to Chester, Pa., headquarters, for special management training and for tests of their abilities. They come to Chester in groups of 25—twice a year. Here's how it works:

Each of the 25 men spends half a day with each top executive of the company.

During coffee breaks with the executive, the trainee fires questions at his senior officer. This carries on for three full days.

Then each of the 25 spend two days in the field with retail and industrial salesmen.

The group returns to Chester for three more days with executives.

The group is given tests. These are kept in personnel files and not seen by the top executives. A doctor of psychology discusses with each of the group what he must do, as shown by his test, to improve himself.

What Other Companies Do

Mr. Dunning's comments brought mentions of what other companies are doing:

Hammermill Paper Co. brings in a Ph.D. from the University of Michigan to spend the better part of a month talking with, and giving advice to, all the Hammermill supervisors and foremen.

P. H. Glatfelter Co. is starting a program this next year with its supervisors with cooperation of the University of Pennsylvania.

Several Wisconsin mills are finding assistance at the University of Chicago and University of Wisconsin. They pay tuition for courses given at Madison for their supervisory talent.

In criticism of management, Mr. Dunning said: "We often fail to create a climate where good supervisors can develop. We fail to tap the hidden powers of our own people—we don't know what they can do."

One of the most serious management problems today is that top hourly workers are making comparatively big money without responsibility and they don't want to be supervisors, he said.

In his main address, Mr. Dunning said: "It is easier to move from superintendent to vice president, than from the ranks to superintendent. When one is promoted to higher rank, the principal tool suddenly becomes not a machine, but words—written and spoken. This is an entirely new art for many supervisors."

Ten Ways to Help a Supervisor

He listed ten ways management can help a supervisor in this transition:

1. Some training for it.
2. Constructive criticism and help.
3. Real patience with mistakes.
4. Encouragement to offset nerve-wracking experiences.
5. Written manual of policies.
6 Clearly defined area of authority.
7. Written history of company.
8. Give him support of specialists in safety, costs, maintenance, personnel.
9. Give him complete labor contract information.
10. Give him a minimum of paper work so he can do his job—supervise.

Then Mr. Dunning listed five other points he said were important for management to do:

1. Teach a supervisor he must do a balanced job—with attention to these ten elements of balanced supervision: (a) quality, (b) safety, (c) cleanliness, (d) costs, (e) methods, (f) machines, (g) materials, (h) policies, (i) personnel, (j) leadership. Add to this: His attitude, which is all-important.
2. Tell him the why of policies and the reason behind the why. He will feel more important, will be more cooperative, enthusiastic.
3. Provide thorough grounding in grievance procedure. Teach him truth will be discovered; it will save him from being "unmercifully mouse-trapped."
4. Discuss labor contracts with supervisors before negotiation. It builds up his sense of belonging. It makes sense because he must administer it.
5. Teach him that an objective instead of subjective approach to jobs will develop better thinking, assure real supervisory success.

"A supervisor is a manager and must know his 'man' to be a manager," concluded Mr. Dunning.

Address by Mead Vice President

Andrew Miller Jr., Mead vice president, Arkansas born, former secretary-manager of the Fox River (Wis.) Pulp and Paper Association, discussed responsibilities of the supervisors in representing management. The supervisor, he said, should recognize these six things "which employes want most":

1. Security.
2. Personal standing and dignity.
3. Fair wage.
4. Opportunity.
5. A voice in determining matters of mutual interest.
6. Leadership.

"A supervisor should not feel he has to answer to every employe's personal whim and desire, however," said Mr. Miller. "Here is where the supervisor's job of interpretation of management policy comes into the picture.

"An employe is less likely to be led down devious economic policy roads if he has good supervisor guidance," he said at another point. "Supervisors should know what principles guide the company in its personnel policies."

Mr. Miller concluded that in return for his understanding and ability to do his job well, a supervisor gains ease of leadership and respect and cooperation from employes.

HIGH POINT of Superintendents National at Atlanta, Ga., in June was Industrial Relations Forum—Here are the participants: BELOW (l to r): VICE PRES. HARRY F. DUNNING of Scott Paper—that company's "How're We Doing?" man who tours nation talking company's business to employes, and ANDREW J. MILLER, Jr., recently promoted to Vice Pres. of The Mead Corp., heading up all their industrial relations. TOP ROW (l to r): ROBT. D. GIDEL, National Safety Council; WALTER B. MOREHOUSE, Nopco, Co-Chairman of session; DON M. ROCHESTER, APPA, and LEE M. BAUER, Mgr. Ecusta Paper Corp., and Chairman of session.

Community Relations Program

In his talk, Mr. Rochester told of the aims of the member companies of APPA who are participating in the community relations program through their regional organizations and with emphasis on activity on local levels in mill towns.

"If this project is to work, there must be free and easy communications both ways—from the top down and from the lowest level of employment straight up to top management," he said. He told of the diverse means of communication —press and radio, employe magazines, handbooks, clubs, tours, movies, picnics, etc.

He said Richard A. McDonald, former executive v.p. of Crown Zellerbach and now organizer of the East Texas Pulp & Paper Co., deserves "credit for starting this project"—he urged APPA governors and executive committee to sponsor it. Nathan Bergstrom, president of Bergstrom Paper, guided activities for 2½ years and now Dwight Thomson, vice president of Champion and third generation of his family in that company's management, is the chairman. Ted Tinker, APPA executive secretary, also has guided the program.

Mr. Rochester was engaged by APPA and told how he visited over 100 mills to learn what was being done and what needed to be done. He found management very cooperative and "anxious to learn, and to find out what kind of a neighbor the people in the community felt them to be."

"It was found that one mill had solved a problem in its community or with its employes, while another down the road 20 miles or so was struggling vainly with the same problem," he said. "So it was recommended to hold forums in several sections of the country where there were similar problems."

The first experiments of this kind already were functioning in Wisconsin, where in three years some 15 "workshops" have been held. These have been the pattern for activities in all other areas. Mr. Rochester called it a "grass roots" program and told how forums have been launched in north New England, south New England, New York, Ohio Michigan and the Southeast.

He said "Michigan will bear watching because it is working out a cooperative program with Western Michigan College, with Dr. Otto Yntema, director of extension and adult education, as coordinator."

Other groups are to start this fall in the Southwest at Shreveport, La., and on the Pacific Coast.

Final speaker at this session was Mr. Gidel of the National Safety Council, who gave some new figures on safety. He said the Paper Box Association figures every lost accident as costing directly $535. For the pulp and paper industry in general, he said, each accident is estimated to cost $335 in direct losses and over $1,000 in both direct and indirect costs.

Mr. Gidel told of the Pacific Coast records in safety (see page 42, May issue). He also discussed compensation payment policies and urged a policy board with management, labor and public members.

* * *

Quite a few of the delegates to Atlanta hardly were ready for the statistic-studded address given by the young college-educated governor of Georgia, Herman E. Talmadge. They could hardly believe he was the son of the elder suspenders-snapping Talmadge, governor before him, or else the colorful stories they had been reading up North were probably exaggerated. The younger Talmadge showed a thorough knowledge of economic facts about his state. He commented on the three new mills being built in Georgia—at Rome by Mead, at Jesup by Rayonier and at Valdosta by National Container—"150,000,000 worth of new industries," he said.

* * *

A high point of the address by M. L. Wilson of Georgia Power Co., Atlanta, at the Tuesday dinner was when he told the audience how 300 new industrial plants have come to the South within just one year!

* * *

Reuben B. Robertson, Sr., tall white-haired chairman of the board of Champion Paper & Fibre Co., made an opening address that scintillated with homely humor, but he mixed up droll stories and poems with a serious message "of grave and heavier responsibilities ahead for all executives and supervisors.

"We need executives of the highest

type," he said. "Colleges cannot come anywhere near meeting our requirements, but college degrees are not an exclusive badge of competence.

"Experienced executives should consider themselves teachers more than ever before," said Mr. Robertson. "We have allowed too wide a difference to grow between supervisors and managerial executives."

He said some experts believe U.S. paper production will rise from 31 million tons today to 42 million tons by 1960. New research developments, he said, promise steady growth.

He also said he is "an ardent believer in plans for providing financial incentives, not only for executives, but for the rank and file workers. I expect to see the incentives plans of payment broadly extended."

* * *

Retiring President Gordon K. Singletary of the association conceived of the idea of inviting management men to tell the superintendents what, if anything, was wrong with their association. He got his boss, Ed Gayner, president of Brunswick, and Gunnar Nicholson, executive vice president of Union Bag, to do the job at a surprise "pay-off" final session.

As reported at the start of this article, Mr. Gayner commented on the fact that only 102 attended the industrial relations forum. "That was terribly discouraging to me," he said. He was pleased, however, by the good turnout for Mr. Robertson and the governor. But he was disappointed again when he counted only 167 at three technical meetings. But for his own meeting, the room was fairly filled up. His friendly caution was: "Be careful how you conduct your national meetings. Next year, make an improvement in attendance."

* * *

As a matter of fact, the Atlanta registration was just over the magic average figure for Superintendents Nationals since the war—it reached 605. There were 490 men registered; 115 ladies.

The all-time high record for a Superintendents National was at Portland, Ore., in 1951 with 888 registered. Actual total at the last dance at Portland was estimated at over 1,000. About 600 was normal registration for recent conventions, although in 1950 Chicago's meeting hit 680.

* * *

Gunnar Nicholson laid it on the line in a frank but constructive talk. Here's what "Nick" told the superintendents, in part:

Secrets: "We are getting away from the very early days of secrets. Management of our industry realizes that it is necessary to send men to visit mills and to talk to their colleagues in order to remain in the forefront with the new things going on in the industry. I don't believe any company is large enough to have its own meetings and disregard the rest of the industry."

Buying Felts and Wires: "We are moving away from the old days of the rule of thumb in our operations, and that applies also to our purchases as well as to our sales. Our customers are asking for specifications and test requirements on the product we sell, and we are doing the same in our purchasing. We are making those purchases based upon analysis of the material when it comes to chemicals; based upon written specifications and guarantees when it comes to equipment. In buying felts and wires, I predict that we will get away from judging by the tonnage we get out of the wire, or the number of days. The time will come when we will specify machine wires and felts based upon test requirements such as tensile strength of the threads and wires. It will not be very long before the superintendent will not have to spend very much time determining what are the best felts. He will have somebody to do that for him, based upon exact figures."

Attending Meetings: "We have made it a hard and fast rule in our organization that anyone we send to a meeting must write a complete report of his observations. They are not going to these meetings to be entertained; they are attending in order to listen to papers that are presented and to exchange views and discuss matters with their colleagues, and to come back and write a report. When they return, that report is a must. We have found that our most capable men are the ones who write the best reports."

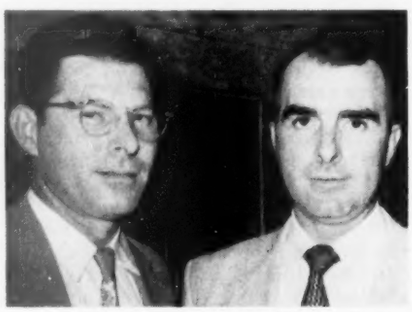
What is Management: "Supervisors and management are absolutely one. The moment a man gets out of the ranks and is a supervisor and is exempt from the Wage and Hour Law, he is a member of management from there on, and he must be treated and informed from the top as an equal member of the management. We are progressing more and more to a joint management operation. In other words, every member of the management, from the foreman at the bottom up to the top man sits down together and makes decisions about operation."

Promotions: "I know of plants where it is definitely declared there will be no promotion beyond foreman, regardless of how capable a man may be, if he is not a decent and respected citizen of the community. I think we have to pay more and more attention to these things. It will go far beyond training. It will involve education, and I think our goal in our industry should be to provide facilities so that any capable man, whether he has a grammar school education or a doctor's degree, has the opportunity to eventually become the general manager of the organization. That must be our goal."

Scholarships: "There are going to be more and more scholarships given to the sons of our employes, and also to our younger employes, and in many cases some of our employes will be sent to take post-graduate work at our expense and return to work with us. It could be a good investment."

SIGN OF SOMETHING? SUPTS. ELECT "PIPE MEN"

HERE ARE NEW PICTURES of some officers elected by Superintendents Association at Atlanta. Is it a sign of something—two "Pipe Men" being honored? DONALD H. DICK, native of Bones, Scotland (at left), is new President of association. He is labor relations director for Howard Smith Paper Mills in Canada and will head 1954 convention at Mount Royal hotel, Montreal, June 20-22. HARRY HADLEY (middle), is First Vice President, will bring convention to Cincinnati in 1955 when he is President. He is Mill Mgr. for Gardner Board at Middletown, O. New Vice President elected this year is another Ohioan, HOWARD E. WEHR (right), 5th Vice Pres., and Division Manager, The Mead Corp., Harriman, Tenn. He was born in Hamilton, O., graduate of U. of Cincinnati.



NEW RIEGEL CAROLINA KEY MEN

A. B. (BINK) GREGORY (left), new Maintenance Superintendent for Riegel Carolina Kraft Mill at Riegelville, N. C., who formerly was with North Carolina Pulp and Manila Electric Co. in the Philippines. He was born in Louisiana.
OSBORNE A. MARROW (right), newly appointed Pulp Mill Supt., for the Riegel Carolina Mill. He went to Riegelville a year ago as tour foreman. He was born in Plymouth, N. C. Picture was taken by PULP & PAPER at Atlanta Convention.

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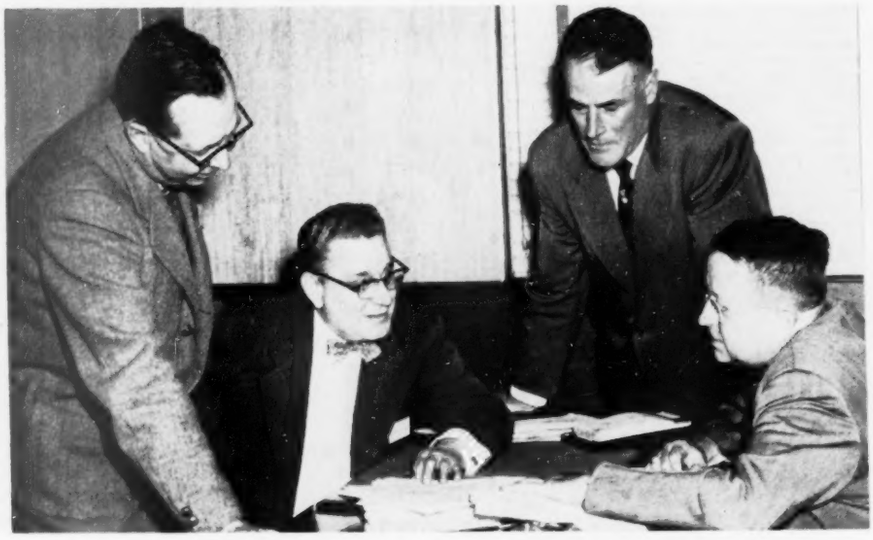
SEMI-CHEMICAL PULP FOR WHITE PAPER

A NEW YORK PROCESS

AN INTEGRAL PART of an extensive overall program begun by West Virginia Pulp & Paper Co. in 1945 aimed at "achieving maximum operating efficiency and quality control through modern technology" has been construction and operation of a neutral sulfite semi-chemical plant at its Mechanicville, N.Y. location.

Although expenditure on this new plant is but a small portion of the $85,000,000 gross investment West Virginia allocated for mills at Charleston, S.C., Covington, Va., Luke, Md., and Tyrone and Williamsburg, Pa., as well as Mechanicville, its significance lies in the fact that it opened up a new wood supply sufficient to take care of all forseeable needs, and within a logging radius of 50 miles from the mill.

Construction of a pilot plant for the NSSC mill was started in 1950; the first digester was blown in Aug. 1951; and, with addition of two more digesters in May 1952, commercial operations began at the rate of 60 tons per day, with potential capacity of 105 tons. As a result of this new capacity of high yield pulp, the Mechanicville soda pulp mill, more than 60 years old, was shut down late in 1952, so that present production consists of 60 tons per day of the NSSC and 140 tons of sulfite pulp.



FOUR MEN RESPONSIBLE for carrying through long planning for West Virginia semi-chemical mill at Mechanicville, N.Y., are: RUSS GEORGE, Administrator, Engineering Design; RAY STOCKER, Assistant Manager, Administration; GEORGE HOOVER, Assistant Manager, Production; and FRED COE, Mill Manager.

Mechanicville Background

There are six paper machines at Mechanicville. The first four started up between 1892 and 1895 and the last two around 1900. Production at that time was about 60 tons per day. When West Virginia purchased the mill from its founders, the Duncan Co., in 1904 it began a rebuilding program which by the early 1920s had brought production to approximately 170 tons daily.

In the 1930s the mill was converted from book and magazine papers to stronger grades of envelope, bond, maps, writing and strong surface printing papers. Further improvements have been made so that the total paper machine capacity—on what was basically the original 60-ton daily average equipment—now reaches as high as 250 tons per day.

The soda pulp mill dates back to 1882 and an original capacity of 15 tons of bleached pulp per day. At the time the paper machines were built, the soda mill capacity was expanded to 40 tons and a new sulfite mill was built with a 30-ton capacity. Under West Virginia management, the soda mill was expanded to 100 tons per day in the early 1920s and the sulfite mill to a similar capacity in 1928. The output of sulfite was raised again to 140 daily tons, which is its present capacity working in conjunction with output from the new NSSC pulp mill.

One of the "facts of life" of the industry in New York State is that there has been an overall depletion of the softwood component of its forest resources and an increase of its hardwood component for the past number of years. So the problem has become that of finding means of utilizing the hardwood beech, birch and maple, or encountering increasingly higher costs that could lead to wholesale shutdowns.

West Virginia management has long

MOST COMPLETE SEMI-CHEM SERIES

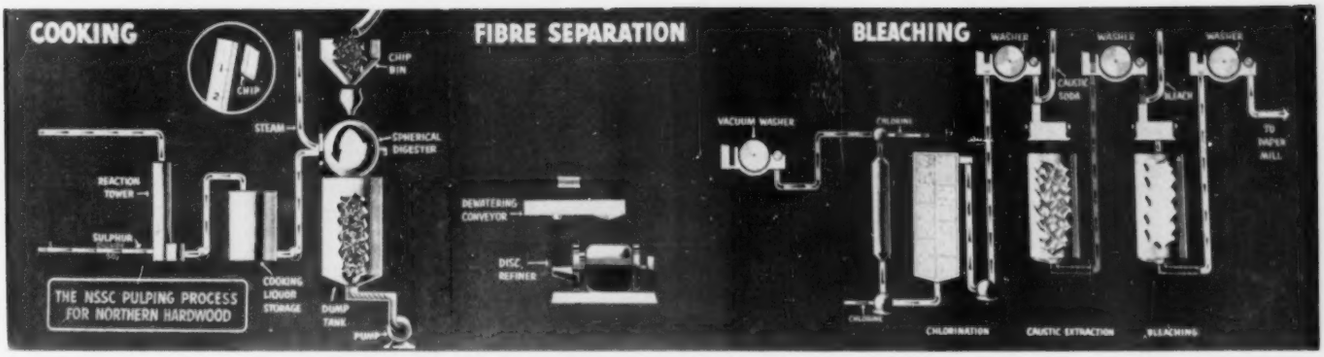
THIS IS ANOTHER in the long series of special and exclusive articles which PULP & PAPER editors have gathered in United States and Canada on semi-chemical pulping.

The most complete coverage of semi-chemical pulping has been in PULP & PAPER. There have been some 16 comprehensive, illustrated articles on new plants of this type or on major semi-chemical subjects.

But that's not all! Watch for future issues—more special and exclusively prepared field articles on semi-chemical processes and plants in commercial operation will appear. They are now being prepared by PULP & PAPER editors.

At the Superintendents Convention in Atlanta a whole session was devoted to this subject. Plants discussed there have all been described in this magazine. Here are past articles in the series in PULP & PAPER—with month of issue and page number indicated:

Nov. 1949 (61)—Sonoco Products pioneer plant, Hartsville, S.C.
Apr. 1950 (44)—Abitibi's Sturgeon Falls plant in Ontario.
June 1950 (40)—Fibreboard's Tuf-Fir plant, East Antioch, Calif.
Aug. 1950 (35)—General Review—bringing process up-to-date.
Aug. 1950 (38)—Consolidated Water Power & Paper's Wis. Rapids plant.
Nov. 1950 (58)—Gaylord Container's plant, Bogalusa, La.
Dec. 1950 (44)—American Box Board's plant, Filer City, Mich.
Jan. 1951 (50)—Green Bay Paper & Pulp plant, Green Bay, Wis.
Mar. 1951 (78)—Rhinelander (Wis.) plant development work.
July 1951 (64)—Bathurst Power & Paper, New Brunswick plant.
Feb. 1952 (92)—Semi-chem. made for world market in Finland.
Apr. 1952 (50)—Camp Mfg. Co. plant at Franklin, Va.
May 1952 (42)—N.Y. & Penn Co., Lockhaven, Pa. s.m. effluent use.
May 1952 (60)—Using Pacific Coast woods, Madison, Wis., laboratory.
Oct. 1952 (40)—Groveton Papers Co. plant, Groveton, N.H.
Nov. 1952 (44)—Riegel Carolina's plant, Riegelwood, N.C.



ILLUSTRATED FLOW OF MECHANICVILLE SEMI-CHEMICAL PROCESS

been alert to these facts and the development of a NSSC process followed investigations and research with the kraft process. Although it was felt a satisfactory bleached pulp could be made by this process from the available hardwoods of the area, the cost of the project seemed prohibitive. Study then began with the sodium sulfite process, and research was so encouraging that it led to the building of the Mechanicville pilot plant and the later shift to commercial production of bleached neutral sulfite semi-chemical pulps.

The NSSC Process

The Mechanicville semi-chemical operation for bleached hardwood pulps is believed potentially the largest yet built in this country. For, while present production is set at 60 tons per day, its capacity is 105 and can be expanded beyond that.

Chips are prepared by conventional methods through use of a Carthage Machine Co. 10-knife chipper and Ball & Jewell Co. re-chippers following screening. Special care is given to chip size, to give a perfect chip not more than $\frac{5}{8}$-inch long along the grain to permit rapid penetration of the cooking liquor. The sodium sulfite is prepared by sulfiting a solution of sodium carbonate in a Jenssen packed tower with SO_2 gas produced in a sulfur burner. A tank of soda ash solution is circulated through the tower until the desired ratio of sulfite-to-carbonate is reached. Soda ash in the cooking liquor neutralizes any organic acids released from the wood during the cooking process.

Cooking takes place in three Biggs 16-foot rotary globe digesters—one of which is constructed with $\frac{3}{4}$-inch 316 ELC stainless steel, and the other two have 1-$\frac{3}{16}$-inch mild steel shells. All three are insulated with 2½-inch Fiberglas with 16-gage metal over the Fiberglas on the outside. The Mechanicville technicians felt the rotary digesters provided more uniform treatment, shorter cooking cycles, and higher possible liquor concentrations for the same chemical charge than stationary digesters.

The digesters hold a 9-cord charge—which would be about 19,000 oven-dried lbs. of poplar, or 25,000 lbs. of mixed beech, birch and maple chips. Digesters are charged with approximately 20 percent sodium sulfite liquor on the oven dry weight of the wood, and cooking takes place in 4 to 5 hours with a maximum pressure of 115 psig and a maximum temperature of 170° C. During the cooking cycle the digesters are rotated at 1 3 rpm by Louis Allis induction motors through gear reduction.

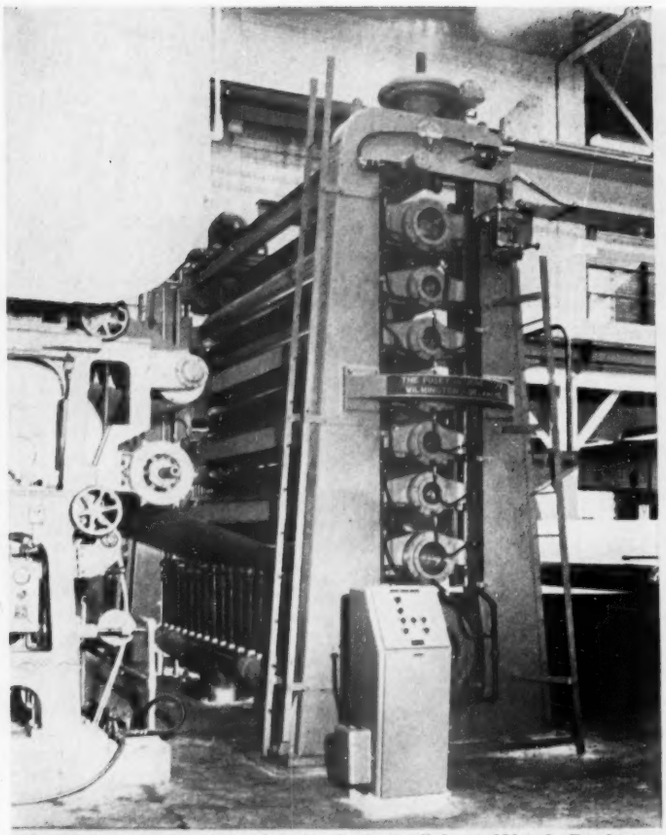
After the cook, waste liquor is blown to a waste liquor tank, and chips are dumped into a dump tank built to fit up around the bottom of the rotary digester. This tank is fitted with an Impco high density tower discharge unit which has a rotary plow and double screw arrangement for removing the chips from the digesters. Dilution liquor is added and softened chips are pumped by Warren pump to the drainer conveyors, first passing through Dings Magnetic Separator Co. magnets for removal of tramp metal.

OPERATION OF MECHANICVILLE SEMI-CHEM MILL is in hands of BOB DOE, Pulp Mill Superintendent; PHILIP MADEIROS, Assistant General Foreman; and HORTON GIRDLER, General Foreman. Mr. Madeiros and Mr. Girdler are assigned specifically to the semi-chemical operation at Mechanicville.

MODERNIZATION OF WOODYARD has gone on simultaneously with construction of a new semi-chemical plant at Mechanicville. Shown here is part of the new conveying system, designed and supplied for the operation by the collaborative efforts of Tidewater Construction Co. and Jeffrey Mfg. Co. High stacker is at left. Building at right houses four Fibre Making Processes barking drums recently installed.

There are two dewatering conveyors, each about 75 feet long, one of which is used for poplar chips and the other for the mixed hardwoods. They are connected so they can receive the charge from any of the three digesters. Hot spent liquor is removed in the conveyors by passing chips over perforated stainless steel plates. The drained chips are carried on to variable speed screw conveyors for feeding to the refiners. Some hot spent liquor is added here to control the refining consistency and to save refining power Mechanicville uses the one-stage refining process, using Bauer and Sprout-Waldron equipment.

From refiners the pulp is washed on an 8 x 12 Impco vacuum washer and then screened over flat screens of Impco and Sandy Hill type. The screen room has 14 flat screens—12 primary and 2 tailings—which is more than adequate for the tonnage presently going through the mill. Thickening of accepted pulp after screen-



Improved design Puseyjones Calender Stack installed on 180-inch Fourdrinier Machine. Note the streamlined frames due to improvement in roll lifting mechanism.

Modernize with a new Puseyjones Calender Stack

Many mills are replacing worn-out stacks having plain bearings with modern equipment having all rolls mounted in anti-friction bearings . . . assuring better finish, higher speeds, lower maintenance cost and greater profits.

Main frames may be of heavy cast iron pattern or welded steel construction. Rolls may be of conventional chilled iron or higher grade alloy for longer wearing life and less regrinding. All roll bearings of heavy duty roller type lubricated by pressure feed oiling from an automatic circulating system. Bearing housings may be provided with Lucite observation windows. Air loading system for applying additional nip pressure.

In the latest Puseyjones Calender Stack, the lifting rods are located inside the frames on the same center line with the bearings, assuring uniform distribution of bearing loading when lifting the rolls by means of motor-operated mechanism. Latest flexible doctors may be used with pressure adjusted throw-off mechanism and motor-operated oscillating device for each doctor.

Whatever your machine rebuilding problem involves, it will pay you to enlist the experience of Puseyjones. Write or call us today.

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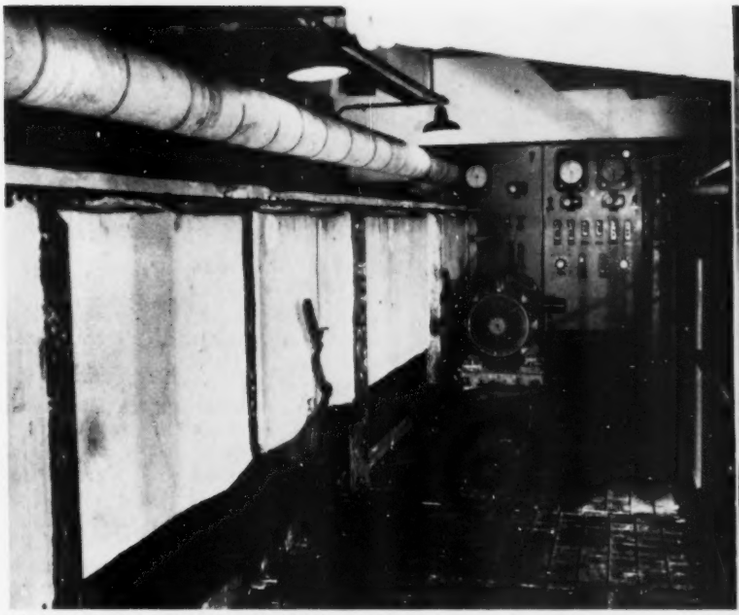
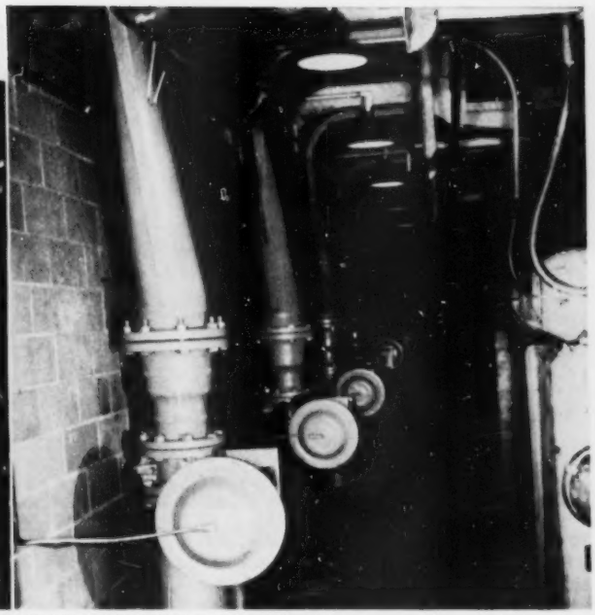


THERE ARE TWO DRAINER CONVEYORS at Mechanicville, one for poplar and one for mixed hardwood chips. Drainers are about 75 feet long—insulated to prevent heat loss. Notice control panels in the rear, and dump control to refiners at bottom.



INTERESTING DEVELOPMENT by West Virginia men are these individual flow lines (right) to the flat screens rather than to a head box. There are 14 flat screens in the setup—12 primary and 2 tailing.

ing is on an 8 x 16 Impco thickener, whence pulp goes to a storage tank and then to bleach plant.

Interesting is the system for handling of waste liquor from digesters for heat recovery. Liquor is blown into a tank and pumped to the digesters for cooking liquor dilution; to the dump tanks for level control; and to chip pumps for dilution to refiners. Alongside the waste liquor tank is a hot water tank with condenser on top. Steam from the blow goes through the condenser with condensed water falling into the hot water tank. Hot water is used to maintain the required level in the waste liquor tank.

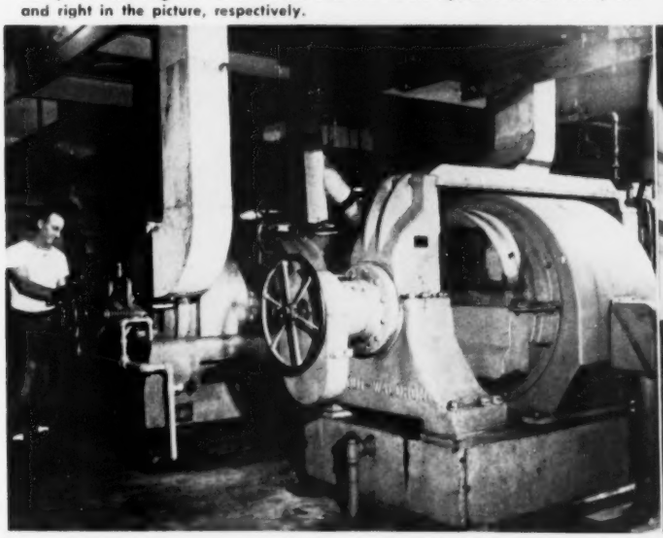
Bleaching Process

The bleaching of the NSSC pulp is done with conventional processes and equipment using a three stage bleaching sequence consisting of low density chlorination; high density hot caustic extraction; and high density hypochlorite. Since semi-chemical pulp requires almost four times as much chlorine as sulfite pulps, the difference in the process is the forcing of chlorine gas under pressure into the pulp in a mixer. The pulp then passes down a long tube where, under pressure, the reaction between the chlorine and the ligneous material is completed. In another mixer more chlorine may be added and the pulp flows into the bottom of a tower for the first bleaching stage. From this point the procedure is conventional.

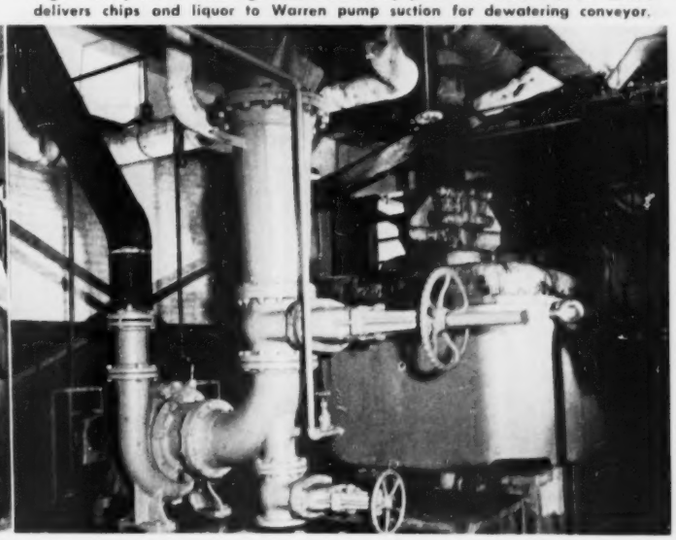
Mechanicville operators say that through this three stage system they are able to produce a NSSC pulp "equivalent

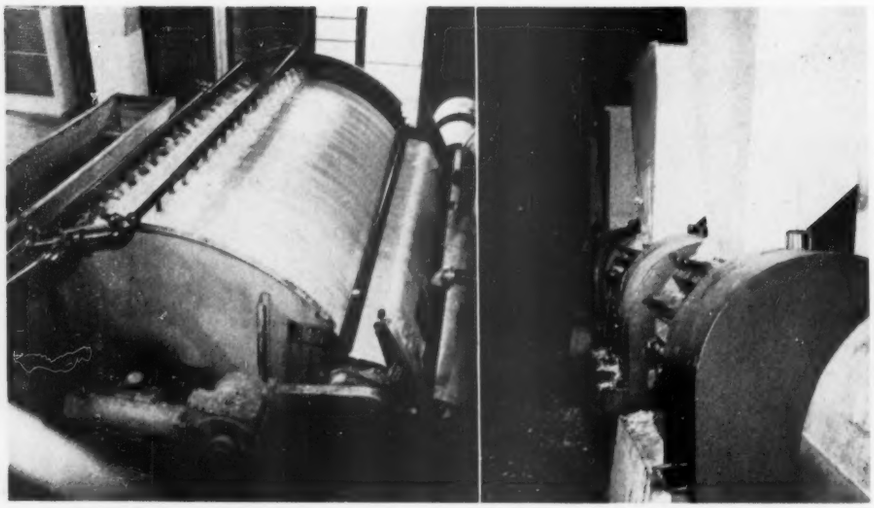
OVERHEAD VIEW LOOKING DOWN on 10-knife 88 inch disc Carthage chipper at Mechanicville. Barked pulpwood logs are entering the chipper from the right.

SIX REFINERS are in operation at the Mechanicville semi-chemical plant with this photo showing one of the Bauer and one of the Sprout-Waldron units, left and right in the picture, respectively.



AT MECHANICVILLE at bottom of each dump tank under digesters is Impco high density tower discharge unit with rotary plow and double screw which delivers chips and liquor to Warren pump suction for dewatering conveyor.





FOLLOWING REFINING at Mechanicville, pulp is washed on 8 x 12 Impco washer (left) before going to flat screens. Pulp is then thickened on 8 x 16 Impco thickener.

AT MECHANICVILLE N.Y., MILLS Ball & Jewell rag cutters (right) are used as rechippers at the discharge end of each Tyler-Rotex chip screen.

to or better than a coniferous sulfite pulp," with the exception of a slight deficiency in tearing strength. This bleached pulp is being added to furnishes of many grades of paper formerly containing high percentages of softwood sulfite pulp, and is being most extensively used in West Virginia's Mechanicville papers.

(For cover picture of Mechanicville mill and story of an unusual open house held there see page 28, Nov. 1947 issue.)

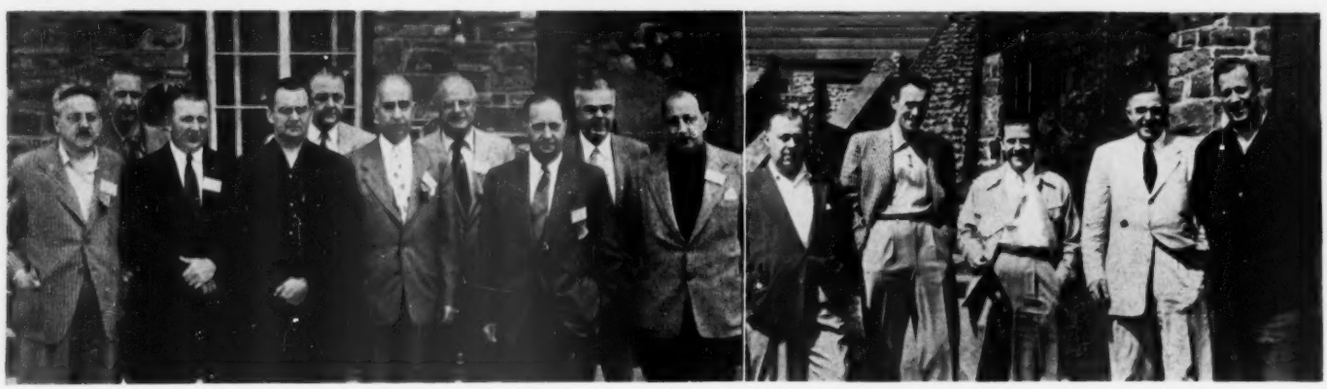
PICTURES AT LAKE PLACID MEETING

ALMOST 200 INDUSTRY MEMBERS took part in 1953 Annual Spring Meeting of Empire State Section of Tappi at Whiteface Inn, Lake Placid, N.Y., June 8-9-10. Close contest resulted in joint award for WILLIAM J. COPELAND (left), Research Division, International Paper Co., Glens Falls, N.Y., and JOHN D. HANKEY (second from left), Sealright Corp., Fulton, N.Y. Their two papers, "The Reclamation of Waste Paper," and "A Study of the Weight Factors of Pulp," respectively, shared $100 junior prize award sponsored by Empire State Tappi.

A LUNCHEON PARTY BROUGHT TOGETHER group at right: (l to r) JOHN MOFFETT, JR., National Distillers Chemical Co.; JAMES GABLER, Fleetwood Chemical Co.; FRANK BAILEY, Cameron Machine Co.; and WILLARD SCHROEDER and JOHN SEFARIAN, also from National Distillers.

OFFICERS AND MEMBERS OF EXECUTIVE COMMITTEE elected by Empire State Tappi in group at left above (l to r): W. R. WILLETS, Titanium Pigment; D. CHACE MATHER, Carthage Paper Makers Inc.; G. K. STORIN, Niagara Alkali; RALPH N. PRINCE, J & J Rogers; F. G. SOMMERVILLE, Armstrong Cork Co.; R. M. DRUMMOND, International Paper; H. D. COOK, Sweet Bros. Paper Mfg. Co.; J. W. CROCKER, Sandy Hill Brass & Iron Works; PAUL L. HAGGERTY, George LaMonte & Sons; and C. J. SIBLER, West Virginia Pulp & Paper Co. Mr. Mather is new Chairman; Mr. Prince continues as Secy-Treas. Mr. Drummond retired as Chairman.

EARLY RISERS FOR THE TECHNICAL SESSIONS in group at right (l to r): RILEY OWENS, National Starch Products; GEORGE RITTENHOUSE, Virginia Smelting; ROBERT GREENE, H. Waterbury & Sons; S. F. M. MCLARIN, Penick & Ford; and WM. MONSSON, Hooker Electrochemical.



Veteran Sales Chief Joins East Texas Co.

Clark H. Morian, Jr., has been appointed general sales manager of the East Texas Pulp & Paper Co., it is announced by R. M. (Mike) Buckley, general manager. Mr. Morian for some time will make his headquarters in New York City.

Previously he was eastern sales manager of the Hollingsworth & Whitney Co., being with them since 1946. Prior to that he was salesman for the Cherry River Paper Co.

Mr. Morian has a broad experience in the development and sale of special industrial and food packaging converting papers and board, which, together with chlorine dioxide bleached kraft market pulp, will be among the products of the new mill being built at Evadale, Tex. During 1951 he served as chief of the Special Food Board Section of the Pulp, Paper, and Paperboard Division of NPA.

Morningstar, Nicol, Inc. Distributes Pabst Amizyme

A joint announcement by Pabst Brewing Co., Milwaukee, and Morningstar, Nicol, Inc., New York, states that the latter firm has been appointed exclusive distributors to the paper industry of the new Pabst starch converting enzyme called "Amizyme." The Morningstar paper department, headed by Jerry Strasser, has assumed responsibility for sales and technical servicing on a nationwide basis. To assist in field development, Herbert Gardner, former paper mill department chemist of Pabst Brewing Co., is Morningstar's technical sales service engineer in the Midwest.

The Pabst grade of enzyne is described as productive of liquefaction or dexternation of starch in such a manner as to produce high dispersibility of the starch with a minimum production of sugar.

REPRESENTATIVE SALES — EARNINGS

These sales and earnings reports for first quarter of 1953 were especially prepared for PULP & PAPER by Cyrus J. Lawrence & Sons, members New York Stock Exchange, from statistical services and published reports. While the figures are believed to be correct, no guarantee is given as to their accuracy.

An attempt is made here to group, roughly, similar companies. Note market pulp companies are listed first. Then, Northern integrated mills. Then, integrated operations with mills in both North and South. Then board manufacturers. Finally, a miscellaneous group.

	Net Sales (000)	Income Bef. Taxes (000)	% Of Sales	Net Income (000)	Net Per Share
Puget Sound Pulp & Timber Co.	$ 5,110	$ 1,508	29.5	$ 676	$ 0.87
Rayonier Co.	18,772	5,432	28.9	2,666	1.18
Mac Millan & Bloedel Co., Ltd. (fiscal yr. ends 9/30) - (2nd Qu.)	30,729	5,877	19.1	3,034	0.57
Eastern Corp.	5,493	390	7.1	190	0.51
Kalamazoo Vegetable Parchment Co. (fiscal yr. ends 9/30) - (2nd Qu.)	10,831	1,237	11.4	628	0.84
Marathon Corp. (fiscal yr. ends 10/31)- (2nd Qu.)	22,321	NA	-	1,274	0.41
Great Northern Paper Co.	10,890	2,162	19.9	1,141	1.14
Diamond Match Co.	23,398	1,694	7.2	894	0.65
International Paper Co.	166,522	36,333	21.8	13,796	1.52
Mead Corp.	25,923	3,445	13.3	1,308	1.09
St. Regis Paper Co.	49,199	NA	-	3,761	0.70
Scott Paper Co.	40,390	7,491	18.5	2,711	0.87
Champion Paper & Fibre Co. (fiscal yr. ends 3/31/53)-(4th Qu.)	30,792	3,482	11.3	2,159	0.93
West Virginia Pulp & Paper Co. (fiscal yr. ends 10/31) - (2nd Qu.)	29,937	4,781	16.0	2,681	2.82
Union Bag & Paper Corp.	25,832	5,857	22.7	2,692	1.52
Container Corp. of America	45,223	6,824	15.1	2,429	1.18
Gair (Robert) Co., Inc.	29,735	4,394	14.8	1,627	0.75
Gaylord Container Corp.	22,799	3,935	17.3	1,754	0.65
Sutherland Paper Co.	13,752	2,103	15.3	707	0.78
Hammermill Paper Co.	6,953	529	7.6	274	0.31
Glatfelter (P.H.) Co.	4,229	894	21.1	271	1.18
National Container Co.	15,372	2,225	14.5	1,039	0.32
Oxford Paper Co.	13,275	1,469	11.1	601	0.62
Riegel Paper Corp.	10,745	863	8.0	384	0.72
Shellmar Products Corp.	11,571	1,407	12.2	535	1.02

NEW YORK PULPMEN HOLD FIRST TWO-DAY OUTING

First two-day outing of the New York Pulpmen's Assn., traditionally a one-day affair, at Sleepy Hollow Country Club, Scarborough, N.Y., June 23-24, was termed "an unqualified success" as close to 100 representatives of pulp sales companies and guests turned out for the concluding dinner and awarding of prizes. John McDonald, manager of pulp sales, Brown Co., was host in his role as president of the association.

Roger Egan, Bulkley, Dunton, won the Pagel trophy for low gross, donated by Alex Pagel, Pagel, Horton, and M. A. Hescock, Brown Co., won the Anders trophy for low gross, donated by Wm. Anders, St. Regis Sales Corp. These were only two of many prizes.

Songs and patter were presented by a quartet—Carleton and Tim Overton, Castle & Overton; Ed Vaughan, Bulkley, Dunton, and Richard Young, entertainer. Script writer was Keve Larson, Weyerhaeuser Timber Co., who distinguished himself with heroic lines on pulp prices, quality and sales techniques.

Officers for the 1954 outing, also to be two days, are: Robert Nash, Weyerhaeuser Timber Co., president; Philip Hovey, Oxford Paper Co., vice president; and Tim Overton, secretary.

TOP VIEW (l to r): ROBERT NASH (left) Weyerhaeuser Timber Co., who will head the N.Y. Pulpmen for the coming year; the retiring President, JOHN McDONALD, Brown Co., and PHIL HOVEY, Oxford Paper Co., who was elected Vice President.

LOWER GROUP: ROGER EGAN, Bulkley, Dunton (left), who won the Alex Pagel trophy for low gross, and M. A. Hescock, Brown Co. (right), who won the Anders trophy for low net. WM. ANDERS, St. Regis, donor of this trophy, is in center.

THE SOUTH—another in a series of scenes . . . areas where Appleton Wires serve the paper industry.

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FARM WOODLOT CONFERENCE

INDUSTRY CALLS ON EXPERTS TO ATTACK NO. 1 PROBLEM

A REAL PAUL BUNYAN-LIKE stride may have been taken in late June in Chicago toward solving what has been described as by far the greatest and most critical problem in American forestry today.

The problem is how to persuade 4,250,000 owners of small woodlots (less than 5,000 acres each) to practice good timber management. Success, to any great degree, would have a revolutionary impact on forest industries by multiplying their resources. For this great army of owners possesses 75 percent of all private timberlands in the U.S. and 57 percent of all such lands, private or public. It has been a baffling problem, with private industry and federal and state officials attacking it from different directions, often duplicating efforts or leaving great areas untouched.

Private industry—primarily, the big pulp and paper companies—took the first real step to unify and improve these efforts when it sponsored the first National Woodlot Conference ever held. It was a genuine, shirt-sleeve conference in 90 degree weather in the tower of Chicago's Conrad Hilton hotel. Private industry, whose own record of good forest management has been termed excellent by the U.S. Forest Service, summoned 104 hand-picked delegates—Washington men, government extension foresters, state foresters, TVA and ACP officials, railroad representatives, college educators, along with many private industry leaders who have worked hard at the problem.

American Forest Products Industries, Inc., in which the pulp and paper companies are the driving force and major membership, sponsored the meeting. Col. W. B. Greeley, board chairman of AFPI, and a former U.S. Chief Forester, who conceived the idea of the event, left his own private "tree farm" home at Port Gamble, on Puget Sound, to keynote it.

"We have just scratched the surface, but what has happened here is very heartening," he told PULP & PAPER after the 2-day session was over. "Closer team-work at the local level—by industry, federal and state agencies and by consulting foresters—is what is needed now. It is encouraging to see so many people getting the idea."

JAMES L. MADDEN (left), President of American Forest Products Industries, which sponsored first Small Woodlot Conference in history. CHARLES H. SAGE (right), Chairman of two days' conference held in Chicago. He is also new Chairman of Forest Industries Council which met the day before. Mr. Madden is Pres. of Hollingsworth & Whitney, and Mr. Sage is Vice Pres. of Kimberly-Clark and President of Spruce Falls Power & Paper.

STUART B. COPELAND (left), President, The Northwest Paper Co., Cloquet and Brainerd, Minn., who demonstrated top paper industry management's keen interest in the woodlands problem by attending all the sessions of the two day Woodlot Conference in Chicago. He is member of Forestry Industries Council which met day before.

COL. W. B. GREELEY (right), Chairman of Board, American Forest Products Industries, Inc., conceived the idea of the unique Farm Woodlot Conference. He came from his Port Gamble, Wash. Tree Farm home. He is Vice Pres., West Coast Lumbermen's Association.

James L. Madden, president of AFPI and also of Hollingsworth & Whitney Co.; Charles H. Sage, vice president of Kimberly-Clark Corp., who chairmanned the sessions, and other top-flight pulp and paper "brass" on hand—Pres. Stuart Copeland of The Northwest Paper Co.; Chairman Sydney Ferguson of The Mead Corp.; Vertrees Young of Gaylord; Walter J. Damtoft of Champion; L. J. Kugelman of International Paper, and Clyde Martin, chief forester for Weyerhaeuser—echoed these remarks.

"Let's get a bigger supply and not divide up shortages," said Mr. Madden.

The small tree farm movement in Shelton, Wash., was cited as an example. Here Rayonier, Simpson Logging and the Milwaukee Railroad cooperate with federal and state officials in sponsoring small farms, recently certifying nine of them, with the result that 40 neighbors applied almost immediately—wanted to get in the act.

Other outstanding examples discussed at Chicago were "Tree Farm Families" of the Nickey Brothers, Inc., in the Tennessee hardwood belt, and the DeWeese Lumber Co. in Mississippi. The DeWeese company expects eventually to have almost 3,000 farms (averaging 50 acres) in its "family." The company donates professional services and provides a woodyard to handle pulpwood, ties, veneer, etc., from each farm.

The Nickey Brothers story, told by their chief forester, Russell Stadelman, was almost a romantic highpoint of the meeting—he told how they enrolled a mayor, an editor, four lawyers, four doctors and two preachers as tree farmers selling to the Nickey company, and spread the gospel like fervent evangelists in the clubs, colleges, schools, etc., with regular courses set up. They now have 64 cooperating farms.

Mr. Madden, in welcoming the delegates, pointed out that private industry, through AFPI, has a Tree Farm system, now operating in 35 states, which is a shining example of what industry has accomplished.

A FORMIDABLE BATTERY OF SPEAKERS discussed woodlot problem at Chicago. Here is just a portion: Top row (l to r): U. S. CHIEF FORESTER R. E. McARDLE; DR. SAMUEL T. DANA, University of Michigan Dean Emeritus; WILLIAM S. SWINGLER, Assistant Chief, U. S. Forest Service; D. E. HESS, Vice Pres., Glatfelter Pulp Wood Co.; RICHARD KILBOURNE, Asst. Forestry Director, TVA; HARRIS R. REYNOLDS, Secretary, New England Forestry Foundation. Lower row (l to r): M. N. TAYLOR, Wisconsin's Trees-for-Tomorrow, Inc.; DEWITT (SWEDE) NELSON, California State Forester; RUSSELL STADELMAN, Chief Forester, Nickey Bros., Inc., outstanding tree farm "family" sponsors; GEORGE WHITE, Missouri State Forester; W. D. HAGENSTEIN, Industrial Forestry Assn., Portland, Ore.; S. A. ROBERT, Agri. and Forestry Agent for Gulf, Mobile & Ohio Railroad.

He stressed the point that 80 percent of its 4,400 farms are small ownership lots.

Col. Greeley, "father" of the conference, said:

"The changing economic status of forestry in the U.S. has brought a great opportunity to the doorsteps of millions of little landowners. They are only partially obtaining the benefits because of the difficulties of changing old practices and conceptions and getting into the spirit and rules of the new game. If it pays large industry to grow trees systematically, it should pay equally the small owner of the same types of lands."

He said the job ahead is "enormous" and the small woodlot "remains the problem child of American forestry."

McArdle Leads off for U.S.

Richard E. McArdle, chief of the U.S. Forest Service, making one of important addresses of the session, presented "the picture" of the small lot problem.

He suggested that "the job can be cut in half, by concentrating on about 2,000,000 owners of some 130,000,000 acres."

How he arrived at this figure: He eliminated over a million farmers, who he said are doing a good job. While conceding that the big job was with the non-farmer owner or absentee owner, who doesn't need the income, he also suggested eliminating "those who just won't, who can't, or who would be backsliders."

"We need to get down to brass tacks—costs, time required, etc., and to provide group instruction or individual instruction—free, if it can't be paid for, but charge for it when it can be paid for," he said. "We are doing the landowner a disservice when we tell him there is very little he needs to know about forestry. Several owners might sell together, use consultation together, and this may lead to cooperatives.

"The momentum to do the job without public assistance is not there yet," McArdle concluded.

Significant in his talk was the U.S. chief's remark that over 400 large timber ownerships (many pulp and paper companies) and 3,000 medium size holdings "are doing a good job." He added: "But we have to lower our sights from those 4,000 or less to the over 4,000,000 small owners, with whom forestry is a side issue because they don't make their living from it."

Mr. McArdle pointed out that one million of these were in the Middle West and Central states. The largest numbers were in Missouri, North Carolina and Wisconsin, in that order. Many small farms are in the Southeast, too, he said, but in the South there are already many well managed, drawing good incomes, thanks to the pulp mills' assistance.

An interesting point in Mr. McArdle's address was that he revised the widely known statistic which the USFS—prior to his administration—had issued concerning management of small farmlots.

"My guess is that we now have 15 percent instead of only 4 percent of small acreages which are well-managed," said Mr. McArdle. "This is a splendid, a big achievement. The fairly well managed ones remain at 25 percent."

A Parade of Speakers

From the moment that Mr. McArdle sat down a little after 10 a.m. on June 25, until about noon the next day, there was a parade of 24 scheduled and half a dozen unscheduled speakers—private, federal, state, etc.—each one telling a different side of the story.

At the end, Mr. Sage thanked the participants, noted that the time had come when it was fashionable for government and business to sit down together on fair and equal terms, and turned the meeting over to Mr. Madden, who called for final discussion.

Frank Heyward of Gaylord Container Corp., presented a concrete proposal, indirectly pointed to the problem. He suggested that the AFPI award Keep Green certificates on a basis of merit to the small gyppo or contract loggers, wherever they reform their cutting practices to improved methods. These awards to be "decals" they can show on their trucks. Mr. Madden promised the AFPI would consider this at its October meeting.

The extension foresters, though without consultation with other groups, presented a resolution calling for another Woodlot Conference and suggested that half of the time be devoted to discussion. No action was taken on this, and other participants, it was known, favor further activity be confined to local area meetings.

Dr. Dana's Summary

Mr. Madden called on Dr. Samuel T. Dana, dean emeritus of the school of natural resources, to summarize the conference. He had been taking notes on all speakers. He said:

"The aims of this conference are important because they improve land management and industrial wood supply, they will increase incomes of small owners and will check erosion, protect watersheds and wild life on millions of acres.

"While much has been accomplished, by industry getting its own lands under management and by its successes in interesting small owners, too, we have far to go.

"There is no reason why forests should not stand with other crops and benefit where they do (some speakers indicated they expected this free aid to be restricted under the new administration). But a nominal or substantial charge by government agencies for actual services would be in order. What we pay for, we value higher.

"More coordination of agencies, private industry and of forest consultants is needed to avoid duplications, to exchange information. The private consulting foresters will not need to worry. More business will be thrown to them than is taken away.

"Local people should have a strong voice in this program. "Forestry on the farm should be integrated with all other farm activities. But the most fertile field for this work is among the non-farmers. By joining together, owners can afford technical advice and will improve their markets and bargaining powers. The acid tests for this work depends on the incomes and markets.

"Increased value of stumpage justifies this work. There should be integration of all forest products. More technical research in growing, utilizing and marketing, with emphasis on costs.

"The 175,000 boys and girls in the 4-H groups, etc., who are learning good forest management will have a far-reaching effect. What we need is men with the technical ability and the personalities to do this job, men with knowledge of group dynamics, as taught at Michigan and other colleges."

Tinker and Bromley Comments

Earl W. Tinker, executive secretary of APPA, revealed a startling figure—show-

ing how far the pulp and paper companies have advanced in this field—several times higher than any figure previously known. An APPA survey is only 90 percent complete, he said, but it shows 1,233 foresters employed by this industry. Of these, 238 are exclusively assisting small lot owners, and many others are helping part time.

"There isn't any pulp and paper company which would not prefer to get its wood from other sources, such as these woodlots," said Mr. Tinker. "The large woodlands properties some of the company own are merely 'insurance.' Furthermore, these companies today are thinking of the most intensive forestry possible and need the highest quality of professional personnel."

W. S. Bromley, executive secretary of the American Pulpwood Association, pointing out that the small woodlot has been a forestry problem in many other countries, particularly in Europe, suggested that the goals should not be set too high at first. He urged foresters to study group dynamics in order to be better teachers and leaders.

Mr. Bromley said some of the government agencies have been too conservative and unrealistic in appraisals of resources and of tree cutting possibilities.

In one of the discussion periods, official spokesmen agreed that each of the many farm foresters now engaged in this work is costing the taxpayer about $6,000 annually—his pay and supervision over him—of which the state supplies $2,000 and federal government $4,000. As a policy it was stated the farm foresters give three days free service, then suggest a private consultant. Some private consultants don't want this work, it was said.

AS SHOWN IN THIS DRAWING, it is the farmers and small woodlot owners who own 57 percent of all the timber in the United States—4,250,000 small woodlots under 500 acres each—who are the key to future abundance and higher living standards through greatly increased production of pulp, paper and other forest industries. "Let's get a bigger supply and not divide up shortages," said President J. L. Madden of American Forest Products Industries Inc. This article tells how federal, state, private consultants and private industry spokesmen pooled their ideas on how to do this job.

SOUTH CAME OUT strong in support of Woodlot Conference in Chicago. Private industry down South started doing this job among farmers and small lot forest owners 16 years ago. L. to r.: **HENRY MALSBERGER,** Mgr.-Forester of Southern Pulpwood Conservation Assn., who told of its program which began in 1939; **J. E. McCAFFREY,** International Paper's Woodlands Mgr. at Georgetown, S. C., who testified at a Washington, D. C. hearing and flew same day to Chicago meeting; **W. J. DAMTOFT,** Asst. Secy.-Treas. and Woodlands Director, Champion Paper & Fibre; **HARRY ROLLER,** Forester, International Paper Co., who told of work of his company's Conservation Foresters in each state with small owners, and **FRANK HEYWARD,** Gaylord Container, who came up with idea for Keep Green awards for contract loggers who practice good cutting.

Government Speakers

W. S. Swingler, assistant chief of the U.S. Forest Service, pointed out that the FS work with woodlot owners is carried on through state foresters. His talk branched off into a discussion of fire suppressions and what he described as inadequacy of federal and state appropriations.

He declared the Cooperative Forest Management program, under state foresters but with USFS participation in policy, has been inadequate and that 4600 requests for assistance remained unacted upon in 1952. In that year 260 service foresters worked with 28,000 woodlot owners of 2½ million total acres, helping them harvest 600,000,000 bd. ft. of products worth $14,000,000, he said.

He recommended that the USFS-State program "be extended to small mill men and operators for better land management."

He said 300,000,000 new trees were produced in 1952 under the Clarke-McNary law, while private industry and other state agencies produced 107,000,000. But it will take 60 years to do the job, he said. The USFS figures 62 million acres of private lands should be planted.

He praised the extensive planting stimulated by the pulp and paper industry in the South, the activities of banks in providing planting machines and the pulp and paper industry's services in timber marking and marketing aids to small owners.

Speaking for federal extension foresters, W. K. Williams said 45 states have 80 extension foresters heading up programs. They assisted 130,545 farmers last year in reforestation, Christmas tree planting, windbreaks and shelter belts, he said.

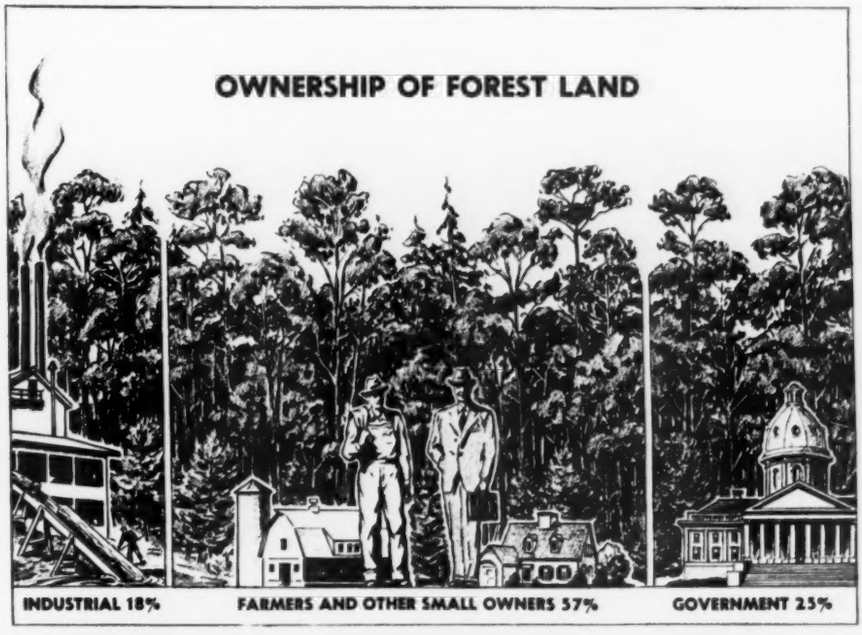
He praised the Southern Pulpwood Conservation Association's work with youth in the South and the work of pulp and paper mills. More organized planning on local levels was urged. He said "it is estimated pulpwood consumption will be up 50 percent by 1975 with population increasing from 157 to 190 million."

A shadow over the next talk by Prentis R. Mabry, chief of program development for the U.S. Agricultural Conservation Program, was the policy of President Eisenhower and Secretary Benson to curtail this type of handout aid. Mr. Mabry detailed extensively aids and moneys given in the past, maximum aid in recent years being 80 percent of cost of trees and planting, excluding land cultivation. He forecast that ACP assistance in 1954 would be limited to "enduring benefits" which might eliminate such items as firebreaks, windbreaks, etc.

Chosen to speak for state foresters was George O. White of Missouri, which has the largest number of small woodlots—230,000 ownerships—and he said his service was only able to reach 1,200 owners per year. Most owners in the past, he said, considered their forests waste or potential pasture lands.

DeWitt (Swede) Nelson, state forester from California, was an unprogrammed speaker called on. He said shifting of land from timber to range in California was serious. Enforcement of a state forest law was difficult with small owners. A state council is trying to get industry and all agencies to present the same stories to farmers. California has 4,000,000 acres in small lots.

The Tennessee Valley Authority spokes-



SPECTATORS AND PARTICIPANTS in the Small Woodlot Conference held in Chicago. L. to r.: CHARLES GILLETT, veteran Forester and Managing Director of American Forest Products Industries Inc., which sponsored the meeting; CLYDE MARTIN, Chief Forester, Weyerhaeuser Timber Co.; STUART MOIR, Counsel for Western Forestry and Conservation Association, who said his group would have a similar session in Seattle in December; W. S. BROMLEY, Executive Secy., American Pulpwood Association, and EARL W. TINKER, Exec. Secy., American Paper & Pulp Association.

man, Richard Kilbourne, rang a bell with management men present as he revealed TVA endeavors to reach its 200,000 small owners through industry. In TVA there are 14 million acres of forest land, nearly 9 million in lots less than 500 acres. TVA works through state agencies, but he emphasized its approach through private operators, even with aid of logging equipment suppliers, too. TVA sees the 4,000 or more timber buyers and sawmillers as vitally interested parties to stimulate forest management by small owners. With their aid, TVA staged 42 timber harvesting demonstrations.

"Potential timber business in TVA is one billion dollars a year, three times its present value," said Mr. Kilbourne.

Pulp and Paper Speakers

Harry M. Roller Jr., forester for International Paper Co., Southern Kraft Division, told how Southern mills organized the Southern Pulpwood Conservation Association in 1939 and committed themselves to a program assisting small landowners to grow continuous tree crops. Southern Kraft, he said, has a conservation forester in each of nine states with staffs of timber markers, and their work is entirely on private lands other than the company's. Other Southern pulp and paper companies have similar staffs.

Conservation foresters for all SPCA mills gave harvesting advice to 9,000 owners of 4,087,000 acres in the past five years. They marked 2,606,000 cords on 785,000 acres. They distributed 76 million free pine seedlings. Now more than 100 of the 600 foresters in the Southern pulp and paper industry are doing this work. He cited SPCA work with children and boys camps, with booklets, movies, etc.

"To reach 1,600,000 landowners in the South, owning 122 million acres, and the other 2,600,000 small owners elsewhere in the U.S., will require aggressive programs," he said.

"Farm Forestry Goes Industrial" was the title of a talk by D. E. Hess, Glatfelter Pulp Wood Co., which supplies Glatfelter paper mills in Spring Grove, Pa. Its company woodlands were among the first Tree Farms in Pennsylvania, Maryland and Virginia. It began a publicity program with small owners back before World War II. However, he noted in just one area recently five different agencies were duplicating aid, all "free" at taxpayers' expense.

Glatfelter has used all types of promotion from pulpwood "picnics" to prizes for boy scout tree plantings contests.

"We think showing a man how to make a profit will sell forestry quicker than any other method," said Mr. Hess. "Now nearly 700 farms within 90 miles of the mill produce wood crops. Some 350 persons shared $500,000 which our company paid. Some producers were putting sons through college with $1500 checks for wood sales."

Henry Waldo, woodlands manager, Franconia Paper Co., said his state of New Hampshire has one of the biggest percentages of tree coverage, 84 percent or 4,800,000 acres, and includes 35,000 small owners. A Forest Cooperative Program was inaugurated last year which requires five years for a man to qualify as a real tree farmer. All government agencies agreed to let the eight county foresters head up the work.

Frank Heyward, of Gaylord Container, told how his company took a cue from a competitor and held a two day county agents meeting in Louisiana and Mississippi just to discuss aid for the small owners. Gaylord has a planting machine program, uses property tours, literature, etc.

Oscar Levine, from the South Olympic Tree Farm in Shelton, Wash., told how a Hollywood actress wanted to get in the act after reading a newspaper story. She made $100 for five acres in its first cutting. Abandoned agricultural lands are being taken over near Shelton for tree farms.

New England Foundation

Harris Reynolds, veteran forester and secretary of the non-profit privately-sponsored New England Forestry Foundation, 3 Joy St., Boston 8, Mass., told how it was incorporated in 1944 to establish forest management centers with services for a 20 mile radius. Over two-thirds of New England's 30 million woodlands acres are in 5,000 acre tracts or less. The Massachusetts Forest & Park Assn. sponsored the foundation which has income from a permanent fund, and has received private contributions and some forest lands bequeathed in wills.

Free service from public agencies, he said, was competing with the Foundation. It was difficult to overcome former clear-cutting practices. The Foundation has served over 1,100 clients so far and now has 14 foresters and 11 management centers. It has cut and marketed for them 62 million bd. ft. Buyers pay in full when signing sales agreements.

"We are convinced the average owner prefers to pay for complete forestry service rather than get free advice and partial service," said Mr. Reynolds. "We are lifting the forestry profession out of public subsidization to independence and professional responsibility."

Henry J. Malsberger, manager-forester of the Southern Pulpwood Conservation Association, Atlanta, told of its varied activities. Much of this—work with youth, printed materials and visual aids, demonstrations for owners, marking of trees and management advice by SPCA, has been previously reported in detail in PULP & PAPER.

A local industry approach in Wisconsin, by the Tigerton Lumber Co., aiming to profit both owner and buyer, was described. Also marketing and forestry aids to owners in Ohio by the Ohio Forestry Association.

Gulf, Mobile & Ohio Railroad's activities with 4-H clubs and youths were outlined. The Southern Pine Association told of unusual and successful programs in the South. Other regional association spokesmen had their say.

"Free aid" was opposed by H. M. Hicks, president of the Association of Consulting Foresters, who said "small owners can best be served by consultants in a free competitive economy."

W. D. Hagenstein, forest engineer, Industrial Forestry Association, Portland, Ore., which has certified 74 farm woodlands as Tree Farms in the Pacific Northwest, averaging 239 acres each, told how this industry organization is spreading the gospel through demonstration shows and a radio program.

"Industry in the Douglas fir region has over 750 professional foresters, of whom 72 are helping our 4-man staff enroll more farm forests as Tree Farms," he said.

Although farmers own only 7½ percent of forest lands in this region, they are capable of producing 12 to 15 percent of the wood needs. The more so now, because there is less of the overmature cheap timber available and industry looks to their lands, containing mostly immature timber of wide age distribution which is ideal for sustained yield cuttings.

E. L. Kolbe, chief forester of the Western Pine Association, was another Oregonian on the program, who told of similar work with farmers in the western pine region.

Arch Crawford, president of the Magazine Publishers Assn., was dinner speaker. He said over 26 percent of magazine revenue was spent for paper, and that more than one copy of a magazine per person is printed every month in the U.S., consuming annually 1,330,000 tons of paper.

EDWARD O. EHRHART has been named president of Armstrong Forest Co., Johnsonburg, Pa. Mr. Ehrhart has been with Armstrong since 1915, and its vice president since 1945. He has been a leader in pulpwood production, and played a large part in work on chemical debarking by his company. He is president of APA.

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WHO'S BEHIND RESOURCES CONFERENCE?

A so-called Mid-Century Resources for the Future Conference has been called for Dec. 1 to 3 at the Shoreham hotel, Washington, D. C., sponsored by the Ford Foundation.

This project was first dubbed "the White House Conference" but White House officials made them withdraw that name. However, President Eisenhower is to make the keynote address at the meeting and forest industry leaders are going to watch with keen interest the nature of his remarks.

For now, it is well established that the forestry section of this conference is going to be keyed strongly to the discredited Paley Report which takes a gloomy view of the forest resources future (see PULP & PAPER's own report on the Paley Report, page 66 of the July issue).

It is expected that the forest resources section of the Washington conference will provide groundwork for a drive to enact federal legislation based on the Paley Report. The conference is shaping up as fundamentally based on the premise that there will be critical shortages of resources and drastic legislation will be necessary. Shortages may face other nonrenewable resources but industry foresters deny this outlook for the forest resources.

The alarm in private industry circles was aroused when it was noted that the same personalities who wrote, or were involved, in development of the Paley Report, are similarly active in planning the Washington meeting.

After this was discovered, the Chamber of Commerce of the United States dissociated itself from participation in the conference. The Ford Foundation has provided $500,000 for these activities, of which $150,000 is earmarked for the conference.

STATE LAWS DISCUSSED BY APPALACHIAN APA

State laws affecting pulpwood production received major attention at the May 12-13 meetings of the Appalachian Technical Committee of the American Pulpwood Assn. at York, Pa. Host company was The Glatfelter Pulp Wood Co., with D. E. Hess, manager, handling most arrangements.

R. F. Bower, Hammermill Paper Co., led a discussion on compensation laws of the Appalachian states as they apply to pulpwood production. It was concluded that industry can be effective in compensation cost reduction through its accomplishments in accident prevention, first aid provisions, and training programs. It can also provide vigorous support for honest, equitable and efficient administration of benefits and claims which cover accidents.

D. W. Sowers, West Virginia Pulp and Paper Co., introduced a discussion on truck laws of Appalachian states as applying to pulpwood. Pennsylvania is the only Appalachian state specifying number of, and types of binders which must be placed around truckloads of wood products. The law calls for three binder chains for trucks hauling logs over 6 feet in length. The ton-mile tax on trucks is becoming widespread and it requires truck drivers to keep records of loads and distances traveled for tax purposes. It was brought out that International Harvester Co. is building a tandem axle truck especially adapted for hauling pulpwood that can be licensed for 36,000 lbs.

John McGuire, Northeast Forest Experiment Station, presented a list of pulpwood definitions for cruise purposes and Mr. Hess discussed the APA Forest Management Inventory questionnaire which proved so successful for the Lake States Technical Committee, and was revised for mailing to the Appalachian group.

Field demonstration was in the yards of P. H. Glatfelter Co., Spring Grove, Pa., where equipment demonstrated included the Dalbeck loader, the Carpenter pulpwood barker, and Rootspread tree planter.

West Virginia Adds Forestland In South

Timber reserves totaling approximately 136,000 acres in North Carolina are being purchased by West Virginia Pulp and Paper Co. as result of options taken over from Richmond Cedar Works, Norfolk, Va. The acreage is in Dare, Hyde, Tyrrell and Washington counties with the main portion, 115,000 acres, in Tyrrell.

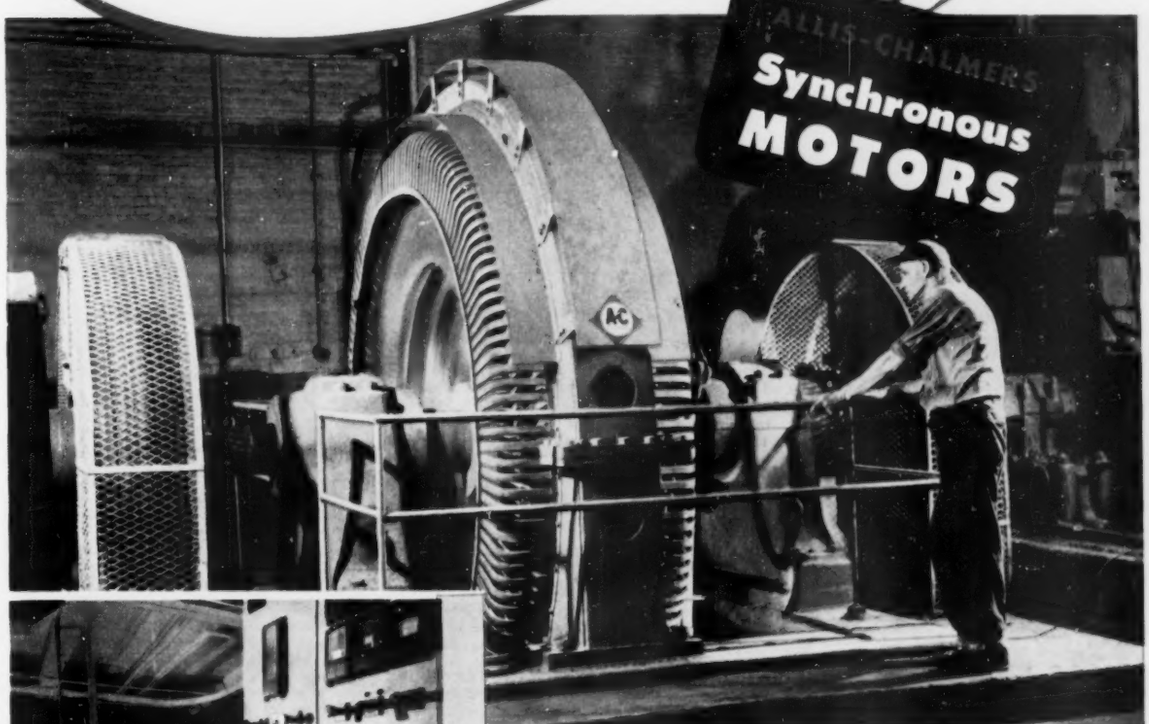
Actual title transfer is to take place August 25 with the announced purchase price said to average $5.50 per acre. The property will be operated and managed as part of the company's North Carolina Woodlands project under the direction of William Ernst, Jr., from headquarters at Manteo, N. C. The new land will not be far from about 150,000 acres of timberland in Dare county purchased last year from Dare Corp.

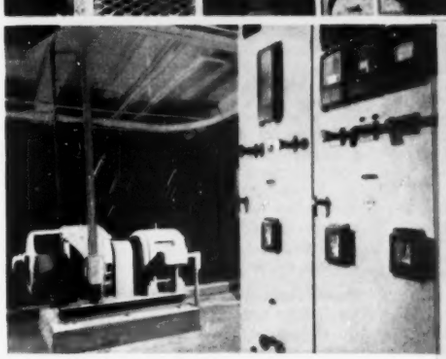
South Will Triple Its Timber Growth!

"Increases in timber volume per acre and in net growth indicate the South will very shortly double and can ultimately triple its present average annual growth per acre," the American Institute of Architects convention in Seattle was told by W. C. Hammerle, Southern Pine Association forester.

THESE ARE THE MEN OF APA who took part in the Appalachian Technical Committee meeting at York, Pa., in May. They are (l to r) First Row—W. S. BROMLEY, executive secretary, American Pulpwood Assn.; H. W. GEIGER, The Glatfelter Pulp Wood Co.; D. W. SOWERS, West Virginia Pulp and Paper Co.; D. E. HESS, The Glatfelter Pulp Wood Co.; T. S. BARR, West Virginia; and A. L. BENNETT, Armstrong Forest Co. Second Row—JOHN MCGUIRE, U. S. Forest Service; WM. H. LINN, West Virginia; J. A. HOLECAMP, APA; RAY O. BROOKS, Glatfelter; P. H. GLATFELTER, chairman, board of directors, The Glatfelter Pulp Wood Co.; and J. E. FISHER, Hammermill Paper Co. Third Row—RICHARD BABBITT, West Virginia; C. A. BECK, West Virginia; ROBERT C. BARIENBROCK, Mead Corp.; RAY F. BOWER, Hammermill; and CHAS. PATTERSON, West Virginia. Fourth Row—P. KOENIG, executive vice president, Glatfelter; C. F. GLATFELTER, Glatfelter; PAUL LANDON, Armstrong; and A. KARL MOCK, Mead.

Revamped Installation Produces 25% More Pulp





Revamped grinder motor in Northern Paper Mills plant at Green Bay, Wisconsin, is rated 3000 hp, 100% pf, 4000 volts, 225 rpm. Revamping required no changes in foundation or motor base.

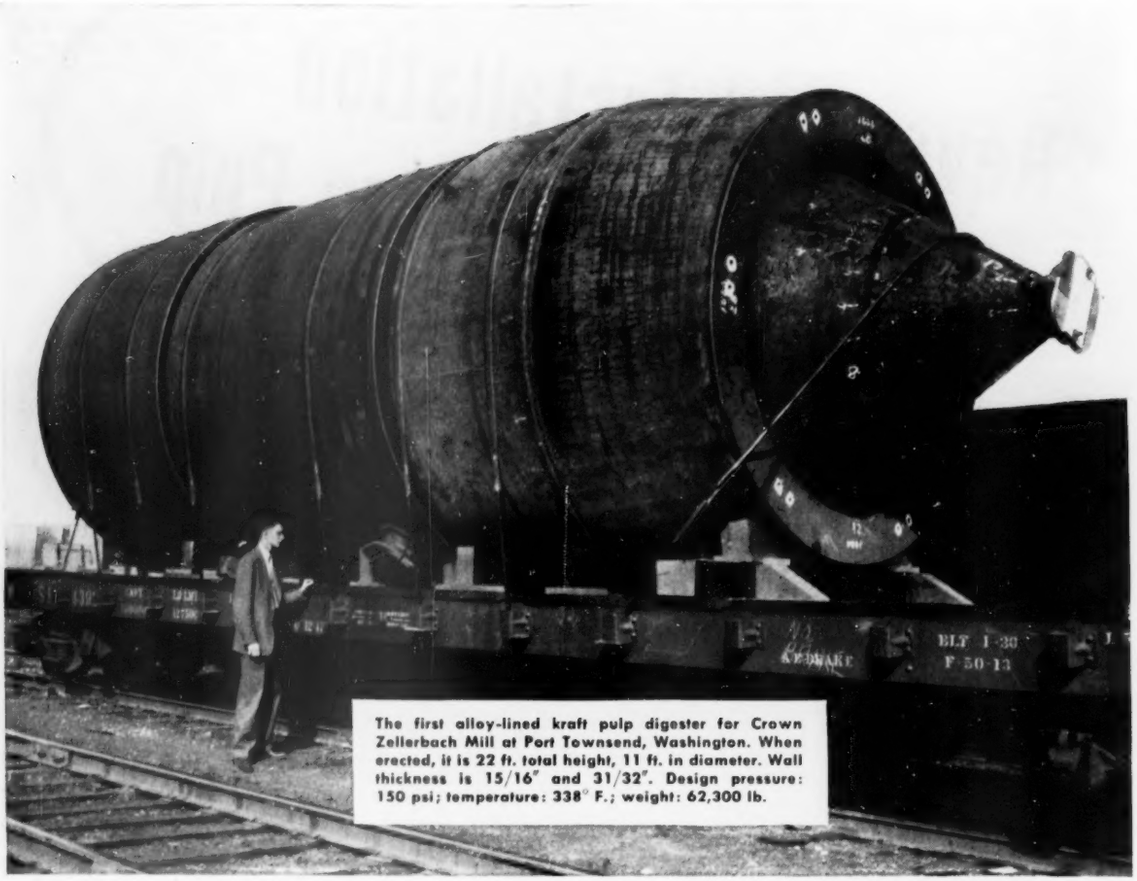
Bottom view shows 25-kw, 1750-rpm excitation motor-generator set and 4160-volt, vertical lift, metal-clad switchgear for control of the grinder motor.

Northern Paper Mills recently completed revamping operations that added 25% to the capacity of a 23-year-old grinding installation. By retaining much of the original equipment, machinery and installation costs were minimized.

To drive larger stones in the grinders, Allis-Chalmers supplied a new stator and rotor to raise the rating of the double-shaft-extension motor from 2500 hp to 3000 hp. In addition to the new motor parts, A-C also furnished an excitation set and switchgear for controlling the motor.

For old or new plants, Allis-Chalmers can supply your electrical needs from power generation to drive motors. For helpful information about synchronous motors, ask your A-C representative for Bulletins 05B7648 and 05B7649, or write to Allis-Chalmers, Milwaukee 1, Wisconsin. A-4027

ALLIS-CHALMERS



The first alloy-lined kraft pulp digester for Crown Zellerbach Mill at Port Townsend, Washington. When erected, it is 22 ft. total height, 11 ft. in diameter. Wall thickness is 15/16" and 31/32". Design pressure: 150 psi; temperature: 338° F.; weight: 62,300 lb.

The sulphate digester that A. O. Smith pre-testing prescribed

There was no experience data on corrosion resistant lining for kraft digesters before 1945, when Crown Zellerbach found it necessary to replace a line of digesters in their kraft mill after a change in pulping material was forced upon it.

A. O. Smith's wide experience in building alloy-lined pressure vessels for oil refineries was called upon to help solve the severe corrosion conditions that faced this mill.

An intensive laboratory and field test of stainless steels and carbon steel was conducted for two years. Samples were exposed to the corrosive liquors and vapors in digesters at the mill and then studied for determination of corrosive rates. Other samples were given accelerated corrosion tests in both white and black liquors imported by the A. O. Smith laboratories. Operating conditions were simulated and these tests conducted simultaneously with the field tests.

One of the alloys was proved superior by these tests and was selected as the lining material for digesters to be built in the A. O. Smith vessel shops. Seven digesters, like the one shown above, were built for the new line and each was shipped in three sections to facilitate installation at the mill.

A. O. Smith cooperated with the paper manufacturer not only in erecting and welding the sections together, but also in developing equipment for stress-relieving the welds and by instructing mill personnel in maintaining the lining and in evaluating corrosion rate of the vessel during periodic inspections.

Our research and engineering groups, backed by unparalleled accumulated data on corrosion resistance problems in the paper industry, are always available to assist you in the solving of any digester or other vessel problems. Inquiries receive prompt and expert handling.

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PORT TOWNSEND DIGESTERS

CORROSION DEVELOPMENTS AND HOW THEY WERE MET

By H. E. Bukowsky
Plant Engineer, Crown Zellerbach Corp., Port Townsend, Wash.

A COMPLETELY NEW KRAFT MILL designed and built from the ground up for the production of liner board and bag paper went into operation in the years 1927 and 1928. It brought greatly enhanced life and stability to the small city of Port Townsend, Wash. It gave Crown Zellerbach Corp. its first completely planned and integrated kraft paper mill.

Built on the northerly shore of Port Townsend Bay the mill briefly described was virtually one reinforced concrete building, divided crosswise by departments in order of the flow of the product. Thus each department could expand northerly independently of any other department. Beginning at the westerly end of the building the departments were, the caustic and recovery, the steam and power, the cooking and screening, the beating and jordaning, the two paper machines and the finishing and shipping departments. This arrangment should be noted because it left the cooking and screening department running across the building at about midlength. That is where the digesters were, of course.

At the beginning there were six digesters, and as paper machine speed increases were developed a seventh digester was added in 1944. These digesters were all of 2500 cu. ft. capacity, 35 ft. in overall height, 10 ft. 6 in. internal diameter and had ellipsoidal heads top and bottom. A 90 deg. included angle conical false bottom joined at the lower end to a perforated short cylindrical section was constructed within the lower end of each digester.

HARRY BUKOWSKY, author of this article on the digesters at Port Townsend, Wash., Mill, where he is Plant Engineer.

The first six digesters were constructed to A.S.M.E. code for forge and hammer welded pressure vessels, for a working pressure of 150 psi. An extra $\frac{3}{16}$ in. was given to the plate thicknesses which resulted in $1\frac{3}{16}$ in. in the cylindrical plates and $1\frac{1}{4}$ in. in the ellipsoidal plates. The actual operating pressures were 125 psi. The steel used was ASTM specification A-89-23T grade A. The seventh digester, installed in 1944, was the same in all respects as the first six except that it was of fusion welded construction and the shell and head plates conformed to ASME-S-I specifications firebox quality, the equivalent of ASTM Spec. A 70 latest revised firebox quality. These specifications are given for those who are interested in the digester corrosion problem.

All seven of the digesters mentioned were originally equipped with liquor heaters and circulating pumps. The heaters, single-pass, had 640 sq. ft. of heating surface, and the pumps a capacity of approximately 900 gpm. Equipped in this manner and charged with 2600 cu. ft. of Douglas fir or Western hemlock, a cook was run off with a liquor charge of about 4000 lb. active alkali expressed as Na_2O. Cooking time per cycle is about 2 hours 30 min. During the cooking period liquor circulated from the bottoms of the digesters through the pumps, through the heaters to the tops of the digesters.

When Corrosion Appeared

Corrosion in the six original digesters was non-existent for about ten years. It began to develop as a program got under way of replacing the original refractory brick-lined recovery furnaces with the more efficient chrome ore-lined recovery units. The hard scale that had been maintained on the inner surfaces of the digesters by the scaling constituents carried by the earlier cooking liquors was beginning to disappear. Where formerly the surfaces were uniformly a dull gray there now appeared shiny metallic areas.

The first of the chrome ore-lined recovery units, a small one, went into service in late 1936; the second, a larger one, was on the line early in 1941, and the last one, the largest of all, took its load in 1946. The disappearance of the scale in the digesters did not develop until after the second of these units was in operation and then only mildly.

At about the time that the protective scale was beginning to disappear a new factor in digester operation developed. We were in the midst of World War II. Hemlock, which until then was available in abundance, was suddenly needed for lumber in the war effort. Cut off from much of the hemlock supply, it was replaced with Western red cedar. The mild rate of corrosion which had been experienced now became very noticeably greater, as much as $\frac{1}{16}$ in. per year in large areas of the digester shells. This augmented corrosion developed also in evaporator tubes. Charcoal iron tubes which formerly were good for five or six years had to be replaced within less than a year.

It was imperative then that a corrosion problem had to be solved, and quickly. Going back to the old way of operating was out of the question. A method of lining the digesters or of replacing them with lined digesters appeared to be the course to take.

So far as was known in 1945 no kraft digester, with years of service, had ever been lined with a corrosion-resistant material. It looked feasible. However, investigation of the procedures that were developed for pressure vessels in the oil refineries, showed that a digester would need to be out of service for 60 days. The cost of this outage, plus the cost of applying the lining, discouraged further consideration of a field-lined job. The conclusion was then reached that a program of digester replacement should be undertaken.

Stainless steels had been used for some 12 to 14 years preceding 1945 to solve many corrosion and abrasion problems, especially where liquors were concerned. It appeared, therefore, that if a program of digester placement was to be begun, one of the stainless steels then available would be considered.

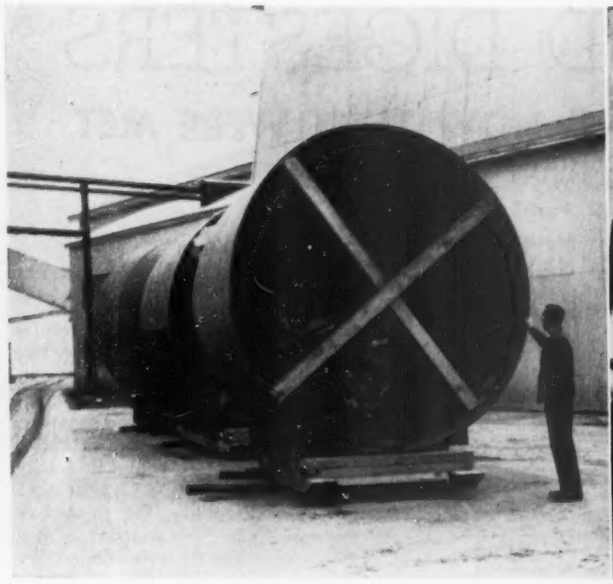
Several well-known builders of pressure vessels were contacted, and the corrosion problem discussed with them. Although the responses from several builders were encouraging with prolific ideas, it was necessary shortly to enter into a mutual development plan with but one of the builders. The work then immediately began to determine the most suitable of the alloys then available. Briefly, from Nov. 1945 until Nov. 1947 specimens of both stainless steels and carbon steels

A. O. Smith and Hydraulic Supply Participate in Project

A. O. Smith Corp., Milwaukee, Wis., builders of digesters, did the linings and the special construction work on the new installations which are described in this article by Mr. Bukowsky. A. O. Smith's extensive facilities and staff in research in metallurgy and welding carried on tests and collaborated with the mill staff.

The four most recent of the digesters described herein, were installed by Hydraulic Supply Co., of Seattle. The sections were assembled right at the mill with a new speedy rigging set-up worked out by Hydraulic Supply.

Mr. Bukowsky describes how this was done.



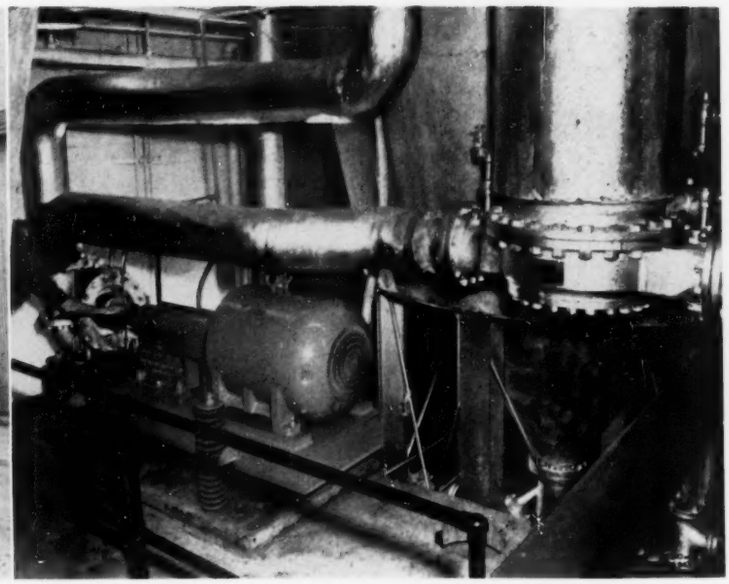


Figure 1 (left): Digester as received from builder. Near piece is top section with liquor distributing manifold. Figure 2 (right): Liquor circulating pump and lower end of liquor heater.

were exposed in the digesters. These included specimens of welding and fabrication. Since stress was known to be an important corrosion factor, some of the specimens were kept under stress during exposure. All of this work was done by the builder's metallurgists.

Laboratory studies of the exposed specimens began when the first ones had been exposed 18 or 19 weeks, these being followed by others at intervals of six months to a year.

Among the various alloys exposed, stainless steel No. 347 with columbium showed the least loss of metal per year. This appeared conclusive enough to warrant ordering the first digester about 18 months after the tests began.

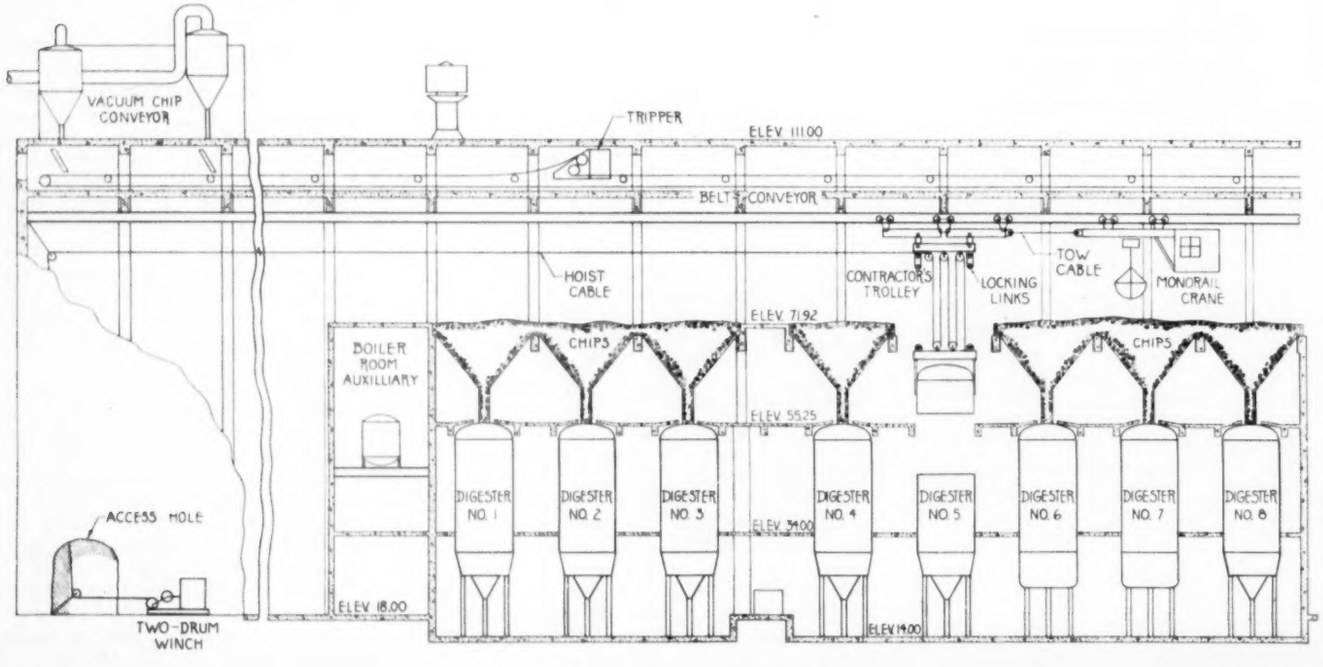
First Lined Digesters

The first digester, which was called No. 8, went into operation in June 1948, about three years after the corrosion tests began. This digester was built in three sections which were welded together on the job. The digester was built with a 7/64 in. lining of No. 347 (columbium) spot welded to one inch carbon steel plate. It was built to about the same dimensions as the original digesters except that it had a 60 deg. conical lower section and no false bottom interior. It was fitted for split liquor circulation with an interior suction strainer belt one third up from the bottom. Liquor is taken from this strainer by the pump passed through a two-pass stainless steel heater then divided by a tee, two thirds of the liquor fed into the top of the digester and one third to the bottom. The pump has a capacity of 1800 gpm, about twice that of the original pumps. The digester as received from the builder is shown in FIG. 1.

No. 8 digester was actually to have been a replacement for the original No. 1 digester, but by the time it was received, April 1948, the production demands on the mill were so critical that no digester could be shut down for replacement. The new digester was therefore erected as an additional digester on a foundation that had been provided during the original mill construction days. Completion of No. 8 installation in June 1948 permitted the removal of other digesters and their replacement one at a time, thus permitting the program to resume without loss of production. With the replacement program again under way No. 1 digester was next replaced and put into service in Feb. 1949. It was a duplicate of No. 8.

It must be borne in mind that the in-

Figure 3: Drawing of digester installation procedure.



stallation of two stainless steel digesters was not considered absolute proof that the corrosion problem had been solved, although until corrosion and stress cracking appeared in No. 1 digester it was confidently believed that the solution had been found. At the worst it was believed that with ordinary repairs a stainless steel lining could be maintained for many years.

Five More Digesters

It was on this justification that five more digesters were ordered, all of them duplicates of the first two. It was while the first of this order was being fabricated that stress corrosion developed at a much accelerated rate in No. 1 digester, so much so that it became necessary to overlay with strip lining the upper fourth of the vessel. Inconel had shown better behavior by far than had stainless steel in the exposure tests that had continued. The repairs were therefore made with Inconel, and the order for the new digesters changed, specifying Inconel.

All of the digesters have now gone into service. There are nine digesters, of which two are carbon steel, soon to be replaced, and seven of new construction. Of the latter, three have the lower two thirds stainless steel lined and the top third of Inconel; while the other four are Inconel lined throughout. Corrosion rates as determined recently are about 0.008 in. per year in the vapor zone with practically no corrosion anywhere else.

It is too early to say to what extent repairs in the vapor zones of the digesters will be necessary as time goes on. Periodic inspections so far have not shown whether the present rate of reduction in the thickness of the lining in these upper areas will continue at a constant rate or accelerate.

Removing Digesters

So that there would be no interference with the normal operation of the mill and no loss in production while an old digester was removed and a new one installed to replace it, a carefully detailed plan was developed well in advance. There were, at the time when the greatest interference could occur, eight digesters to maintain in operation while a new digester was being installed. All digesters are in a line running from side to side of the mill building, flanked at either end by chip lines within the building. Above the digesters are square conical steel hoppers, and above this is a monorail hoist with clamshell bucket serving the digesters from the chip bins. This arrangement is shown in FIG. 3.

The work began when an old digester had completed its last cook and was cool enough for safety. All old piping and other attachments were removed, leaving the bare digester on its foundation. The insulation was cut away circumferentially, around the digester where it was to be cut with torches. The layout of the cutting was so chosen that no piece of the digester would be heavier than the capacity of the monorail crane. This required cutting the digester into six pieces. All circumferential cuts were made before crane service was ordered. Three ligaments at about 120 deg. spacing were left in each cut for quick severance when a piece of the digester was to be lifted out. Holes were cut into each of the pieces for lifting

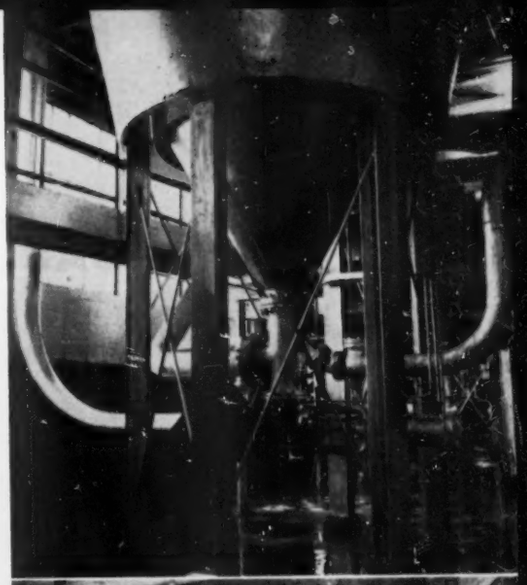


Figure 4 (above): Lower end of digester showing liquor-line, blow-line, direct steam-line and hydraulically operated blow valve.
Figure 5 (below): Digester sections in place ready for welding.

slings. On the maintenance day following, when all digesters were out of service for from six to eight hours, two heavy timber bulkheads were placed across the chip storage above the hopper and a plank deck laid across the opening at the top of the hopper. These were necessary to prevent chips from falling down into the construction space later on. The hopper could now be cut into pieces that could easily be handled by the crane. Here narrow ligaments of steel were left uncut for quick severance later.

It was necessary to keep one of the chip bins empty while the old pieces were taken out and the new brought in. It was also necessary to cut a hole through the empty chip bin wall to allow digester parts to be taken out and brought in. This hole is shown in FIG. 3.

In preparation for diverting the crane from its normal digester service all chip hoppers were filled and the chip conveyor above the crane was set to discharge into the hoppers where chips would later be needed. With the crane now available, the plank decking was lifted and set aside, giving access to the digester and hopper parts that were to be lifted out. Since all parts were held in position only by the uncut ligaments it was a simple matter to shackle each of the pieces in their turn, cut the ligaments and hoist away. About a day and a half was required to remove all old materials including the old circulating pump and its motor, which were situated on a platform in the basement.

With the old parts now disposed of, the wood decking was replaced over the hopper opening, and the crane put back into normal service again.

Bringing in the new digester pieces required a different method than that employed for removing the old ones. In this case the pieces to be handled were too heavy for the crane to handle. The reason for the heavier pieces was that the number of field welds to be made in the new digesters was to be held to a minimum. With two welds to the digester to join three pieces it worked out conveniently that no piece would be heavier than the monorail crane itself. That is the reason the three truck trolley with equalizer beams was used to lift the pieces of the digester. The design was so developed that the load per truck of the trolley was no greater than the load per truck of the crane and its rated load. Thus, at no time was the load on the monorail track and its hangers greater than that to which the equipment is normally imposed. The arrangement of the trolley, the hoisting gear and the portable two drum electric hoist are shown in FIG. 3. It required about three days to bring in the three digester parts, the new liquor circulating pump, the hopper and get all parts properly in position. Only single shift days were worked, thus saving considerable overtime and penalty costs that might have resulted had a well developed plan not been followed.

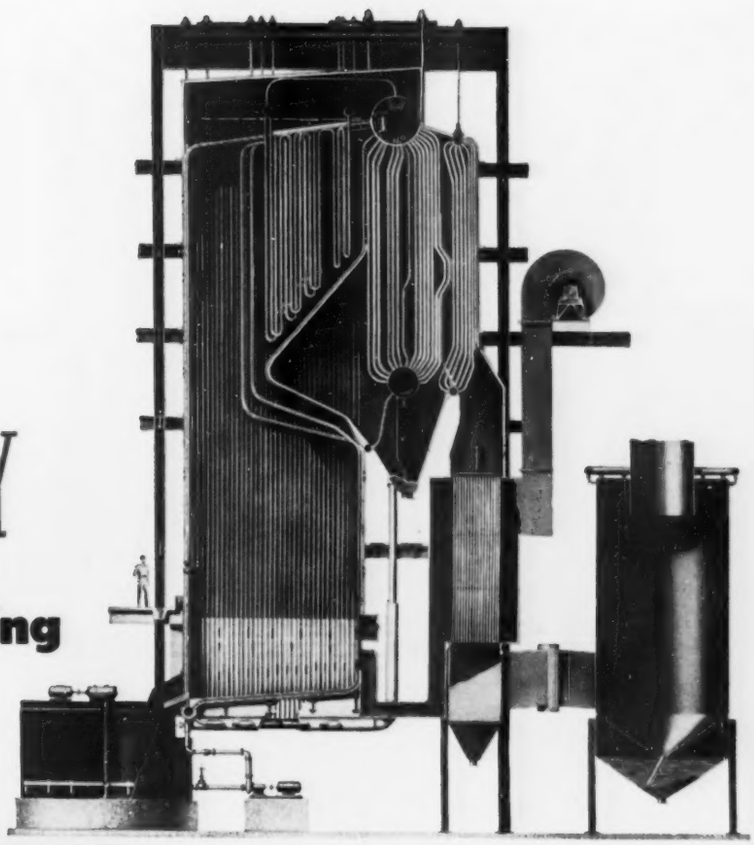
Sirrine On Olin Job

J. E. Sirrine Co., Greenville, S.C., is providing engineering service for Olin Industries' projected pulp mill in North Louisiana.

RECOVERY

at

Roaring Spring



Typical B&W Black Liquor Recovery Unit

Airview of Roaring Spring, Pa., plant of
The D. M. Bare Paper Company

The modernized Kraft mill now under construction at Roaring Spring, Penna., will put The D. M. Bare Paper Company back into pulp production, interrupted since 1951. Chemical and heat recovery will be provided by a modern 83-ton B&W Recovery Unit.

Choice of B&W equipment for this new mill further confirms B&W's ability to design and build efficient recovery boilers for large, medium, or small pulp mills. Foresighted engineering, unexcelled facilities, and many years of experience in meeting unusual requirements, form the base upon which the industry-wide reputation of B&W Recovery Units rests.

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CROSSETT ADDITIONS

ITS DECULATOR AND OTHER IMPROVEMENTS

ADVANCEMENT IN MECHANICAL equipment and production technique continues to be the firm policy of Crossett Paper Mill, (Crossett, Ark.) where may be found facilities of wide interest, in proven operation.

These range from improved shipping, chip handling and counter rolls (see PULP & PAPER May 1950 and Feb. 1953) to greater uniformity of high speed kraft paper through use of a Rotareaed Deculator. Other new equipment is discussed in this article, too.

Dilute stock is sent from the 35,000 gpm fan pump through a 36-inch line to a distribution header to be sprayed through non-clogging nozzles which whirl it at high velocity in discharge against impingement targets in a 6 ft. diameter, 30 ft. long Deculator receiver. The receiver is maintained under high vacuum close to the saturation pressure corresponding to the boiling point of the stock being handled. The targets break the air bubbles, and air becomes separated from fiber and water. A constant liquid level is maintained in the receiver, and stock is pumped from it to the headbox by a 250 hp motor-driven fan pump.

J. C. HAIR, Manager of Crossett Paper Mills, Division of Crossett Lumber Co., Crossett, Ark.

Air is removed from the receiver by a three stage vacuum unit including a precondenser, steam jet, and a two-stage vacuum pump. The completely automatic control system is served by a central instrument panel with push buttons, liquid level controllers, temperature and vacuum recorders.

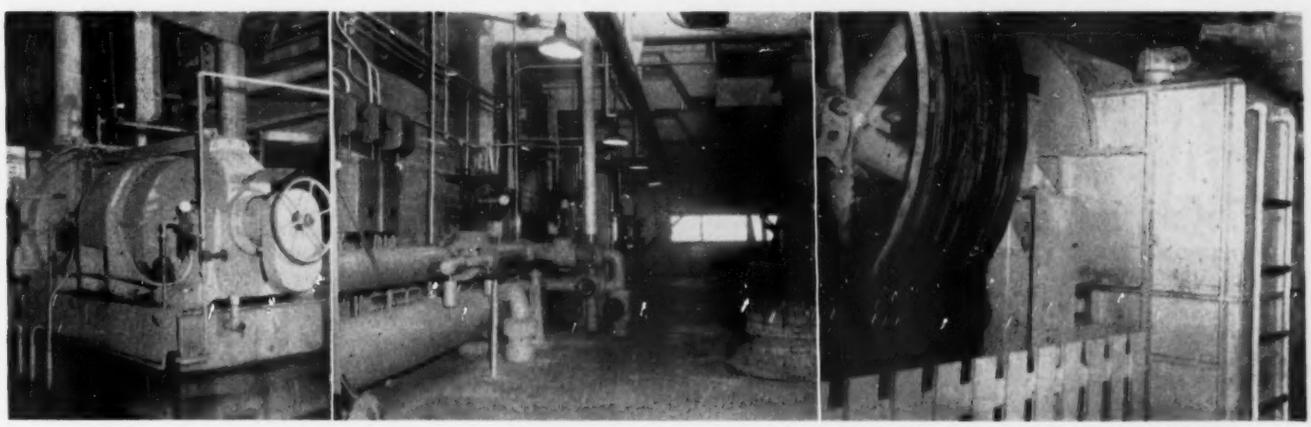
This is the first Deculator installed on a pressure headbox-equipped high speed kraft Fourdrinier paper machine. The machine (Crossett's No. 1) averages 250 tons per day in basis weights of 40 to 90 pounds.

On startup of the machine the Deculator requires five minutes time to fill the receiver, including starting of the four additional motors. After the system has filled with diluted stock, the automatic control takes over. Operation from then on is normal. Changes in basis weight and

SPROUT-WALDRON REFINER installed at Crossett Paper Mill to handle cooking rejects (view at left).

GENERAL VIEW of new section of Crossett's digester operating floor with Foxboro automatic controls (middle view).

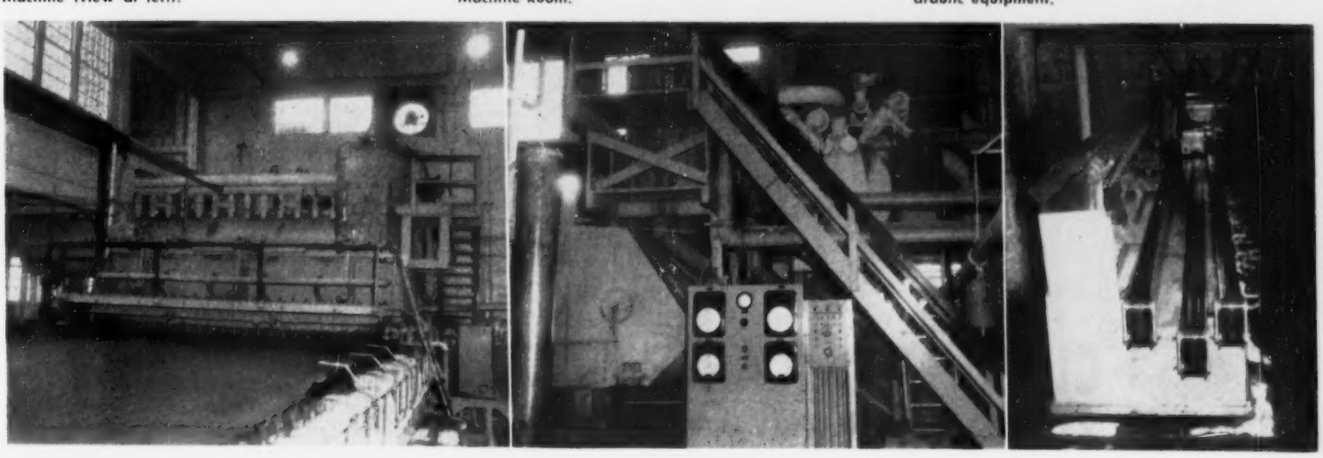
NOBLE & WOOD Victory Beater (right), is served by Allis Chalmers Tex-Rope belt.



ROTAREAED CORP. DECULATOR, looking across Fourdrinier and Headbox of Crossett's No. 1 Paper Machine (view at left).

END VIEW OF THE DECULATOR (middle view) showing central control panel on operating floor of Paper Machine Room.

THIS HANCHETT KNIFE GRINDER (right) at Crossett is mammoth size No. 5-212 AK with Vickers hydraulic equipment.



machine speed do not require alteration of Deculator valve settings. Since vacuum in the receiver is an operational factor, the system must be perfectly air-tight.

Close study of operating results conducted by the mill, comparison being made with the same months of the year previous to avoid deviations due to seasonal pulpwood variation, revealed several improvements from the deaeration by the Deculator. This check was maintained for six months.

In both wet end and dry end comparison of breaks, time lost was reduced. Average monthly savings in machine time amounted to 3 hours 4 minutes on wet end breaks, and 5 hours 54 minutes on dry end.

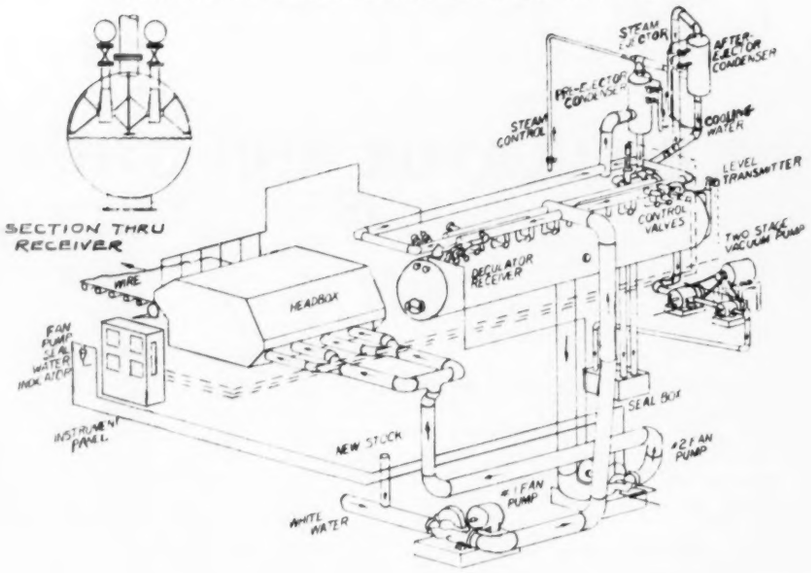
Wire pit foam and headbox foam on wire pit surface, experienced with use of urea formaldehyde, wet strength resins, or starch, have been definitely reduced or eliminated.

Overall machine efficiency, measured by dividing actual production by theoretical production and multiplying by 100 has shown an average monthly increase of 2.97 percent.

A reduction of fiber flocs has been effected, and smoothness test results improved. No noticeable change has been found in caliper, mullen, tear, tensile or fold.

Maintenance costs of the installation have been as normally expected.

DRAWING OF DECULATOR INSTALLATION AT CROSSETT



Pulp Mill Changes — Refiners, Etc.

A number of modern installations have been effected in the pulp mill, the latest being Foxboro automatic digester steam controls. These went into operation about May 1, a further step that followed expansion of the digester capacity to 11 of these units.

Immediately behind the digester operating floor is the new Sprout-Waldron refiner for rejects. This was installed in late 1952.

The Noble & Wood Victory beater has been in service long enough to establish a satisfactory experience record.

As the first Southern paper mill to purchase chips produced at a sawmill with the Soderhamn Machine Mfg. Co. mechanical Anderson debarker, the Crossett mill has had adequate satisfactory experience to install a permanent conveyor system for handling these chips.

Added during early 1953 was an ultra-modern Hanchett Mfg. Co. #5-212 AK Vickers hydraulically-equipped knife grinder.

In May, Crossett was installing its fourth Cowan rotary screen, completing a set that will handle the primary stock completely. The first of these, furnished by Montague Machine Co., Turner Falls, Mass., was installed in connection with high density pulp storage. Crossett was one of the first Southern mills to use this form of storage. The mill experience with high density and the Cowan screens was satisfactory from the start.

In building the high density chest the mill used slip forms for pouring the concrete, facilitating construction. The first

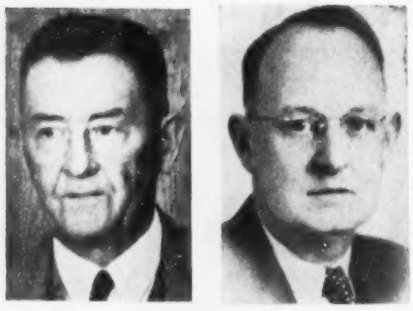
nine feet of storage depth was tile-lined. Density of stock is maintained at 14 percent, with a highly increased storage in comparison with 4 percent dilute stock. Another factor is that low density stock must be continuously agitated but puddling at point of withdrawal suffices for the high density. The mill installed at 21½ hp agitation pump for white water at 60 pounds pressure to thin high density stock for use.

Stock taken from HD storage is put through a surge tank then sent through a consistency and volume regulator to the Cowan screen. The screen puts out 175 tons through an .085 screen with 80 hp. The controls are grouped for one operator to handle the entire room.

The Crossett mill has a working safety program, the woodyard and wood room having turned in a two-year record without a lost time accident. Fifty-three employes worked 222,866 man hours to achieve this.

CROSSETT PAPER MILLS CO. key men include (l to r): C. W. SMITH, Production Mgr.; A. W. DUSKIN, Technical Service Director; R. W. MIZELL, Pulp Mill Supt., and R. W. BURNETT, Paper Mill Supt.

LAMB SUCCEEDS DELONG



WALTER DeLONG (left), one of the outstanding leaders and pioneers in development of the big Pacific Coast market pulp industry, retired June 30 as Resident Manager of St. Regis Paper Co.'s Tacoma, Wash., operations, but continues as a Vice Pres. and Director of the company and will serve in Tacoma in an advisory capacity.
JACK M. LAMB (right), veteran Purchasing Agent who has been with St. Regis since 1928, moves up to position of Tacoma Resident Mgr. For more than a quarter century, Mr. DeLong was active as officer and promoter of companies which built biggest sulfite mills in world on Puget Sound. He joined St. Regis in 1942 and was instrumental in acquiring perpetual wood supply for this kraft operation and directed its expansion and integration with new paper mill and bag plant. Under company plan, retirement in St. Regis is mandatory at age of 70.

Robert DeLong Becomes Assistant to Res. Mgr.

With Jack Lamb's advancement to resident manager of pulp, paper and bag plant operations of St. Regis at Tacoma, Wash., Robert DeLong has been promoted to assistant to the resident manager at Tacoma in charge of wood procurement. He is the son of the retiring resident manager, Walter DeLong.

Robert DeLong has been active in wood procurement for the mill and takes over full responsibility with retirement of Fred E. Chittick, who was in charge of woodlands and wood procurement in the Northwest for St. Regis for the past ten years. Mr. Chittick, who reached the mandatory retirement age of 70, will continue in advisory capacity.

Fred Boyce, Grover Keeth Die Two Days Apart

Two Wausau, Wisconsinites, associates in business and both former presidents of the Superintendents Association, died within two days of each other in June.

They were Fred Comstock Boyce, chairman and president until a few months ago of D. J. Murray Mfg. Co., and Grover Keeth, chief power engineer, Marathon Corp., Rothschild, Wis. Mr. Boyce was 84, Mr. Keeth, 68.

Mr. Boyce was born in Wilton, Saratoga County, N.Y. and started in the industry in the Palmer Falls, N. Y., mill in 1882. He was with Oconto Falls and Brokaw, Wis., mills as superintendent and production manager. He was the first active president of the Superintendents Association (1919-21) his only predecessor serving only a few days. He joined D. J. Murray in 1935.

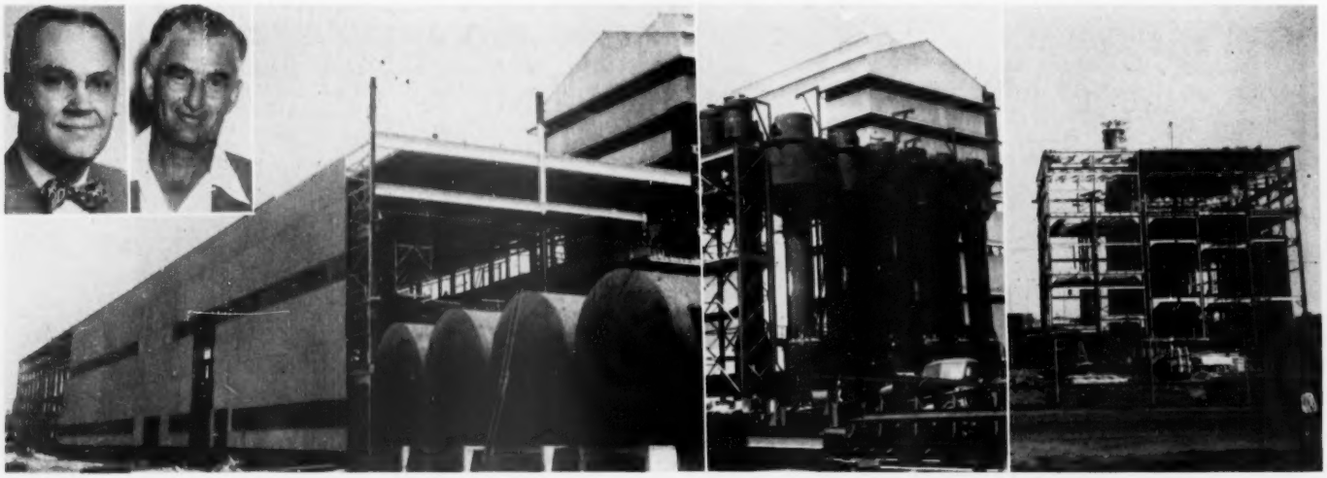
Mr. Keeth had been ill since sudden illness caused him to be involved in a serious auto accident over a year ago while driving to the Superintendents Detroit convention. He was their president 1942-43. He was a director of D. J. Murray Mfg. Co. He graduated from Armour Institute, Chicago, and was with Marathon since 1927.

American Cyanamid Opens Portland, Ore., Branch

A number of pulp and paper industry guests were among 200 attending the "housewarming" for American Cyanamid's new Lederle Laboratories division sales and distribution offices at 3030 N.W. 29th Ave., Portland, Ore. Kenneth H. Tate is branch manager and E. L. Larson, Los Angeles, is regional sales manager with E. F. Howe, his assistant in Portland. R. E. Sumner and Joe Lowerie from New York headquarters were on hand.

PERIPATETIC PULP & PAPER EDITOR TOOK VIEWS OF SOUTHERN MILLS' CONSTRUCTION PROGRESS

THESE PICTURES were taken by PULP & PAPER'S Southern Associate Editor on recent visits to sites of fast-shaping-up new mills of National Container Corp. at Clyattville, near Valdosta, Florida, and Buckeye Cellulose Corp., at Foley, Florida.
Picture at left shows type of side wall being constructed on the 500-ton capacity kraft board mill being built for National Container under direction of Vice Pres. WILLIAM T. WEBSTER (top left). MELVIN FARRIS (top right), Pulp Mill Supt. for the new mill, is on job daily checking work. At this end of building are washer filtrate tanks.
GOSLIN-BIRMINGHAM evaporator installation shows in second picture, in front of recovery boiler building. This mill is to start up in November.
IN PICTURE at right is view of construction at Buckeye's hardwoods dissolving woodpulp mill at Foley. This shows digester building and stack top in background. Graver Tank & Mfg. Co., East Chicago, Ill., is supplying nine digesters.



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NEWS IN PICTURES—ABOUT INDUSTRY MEN COAST TO COAST

IN INDUSTRY NEWS

AVERILL J. WILEY (left), Technical Director, Sulfite Pulp Manufacturers' Research League, Appleton, Wis., association of Wisconsin and Michigan sulfite mills, who has been sent on mission to Europe for eight weeks to investigate latest sulfite disposal and utilization processes and to visit World Wood Fiber Symposium in Sweden and scientific meetings in Germany. He is a native of Spokane, Wash. SAMUEL T. ORTON, JR. (right), who has been appointed Sales Representative in New England states. His firm, Orton Corp., Fitchburg, Mass., represents the new Evans Rotabelt suction unit and other lines in that area.

EARL STACHEL—TOM CARTER

EARL F. STACHEL (left), as Plant Engineer of the Elkhart, Ind., board mill of American Coating Mills Corp., subsidiary of Robt. Gair Co., Inc., has taken over duties formerly held by Larry Moore, now with Black-Clawson. Mr. Stachel was born in Lansing, Mich., is a graduate in elec. eng. from Michigan State. He was with Allis-Chalmers, Milwaukee, in its electrical control plant before joining American Coating in 1946 as assistant to Mr. Moore. THOMAS N. CARTER (right), former Chief Engineer for Cameron Machine Co. and later in engineering for Bagley & Sewall, has joined Champion Paper & Fibre Co. as technical assistant to Director of Production Leo Geiser in Hamilton, O.

JOINS ONTARIO-MINNESOTA

RUDOLPHE PARADIS, former Res. Mgr. of Howe Sound Pulp Co., Port Mellon, B. C., has joined Ontario-Minnesota Pulp & Paper Co., Fort Frances, Ont., as Assistant to V.P. and Gen. Mgr. J.F. Mac Kellar. Mr. Paradis, 40, is grad of U. of Brit. Columbia, was at Ocean Falls and LaTuque mills.

ADVANCE IN EASTERN CORP.

FOUR MEN ADVANCED AT EASTERN CORP. They are (l to r): W. DOUGLAS SOMMERVILLE (top left), elected Vice President in charge of Production for all Eastern mills; DONALD W. DANFORTH (top right), named General Supt. of South Brewer, Me., mill; FREDERIC H. STETSON (lower left), new Chief Engineer; and LAWRENCE C. LYNCH (lower right), promoted from Assistant Office Mgr. to Service Director.

PARKER OF MEXICO—HAM OF N. Y.

MEREDITH PARKER (left), head of Corporacion Celulosa Mexicana S. A. (San Juan de Latran No. 24), Mexico City, Mex., was a recent visitor in Chicago and other U. S. cities. He has represented Puget Sound Pulp & Timber Co., market pulp producers, for many years in Mexico and also represents Mt. Hope Machinery Co. He reports interest in new overhead cable transportation systems for logging in mountainous Mexico.

EVERETT G. HAM (right) Technical Director, John A. Manning Paper Co., Troy, N.Y., was honored as one of 10 outstanding members of the American Society for Testing Materials, and received an ASTM Award of Merit at the group's meeting in Atlantic City, June 30. Mr. Ham is a member of the society's committees on paper and paper products and electrical insulating materials.

BROWN COMPANY CHANGES

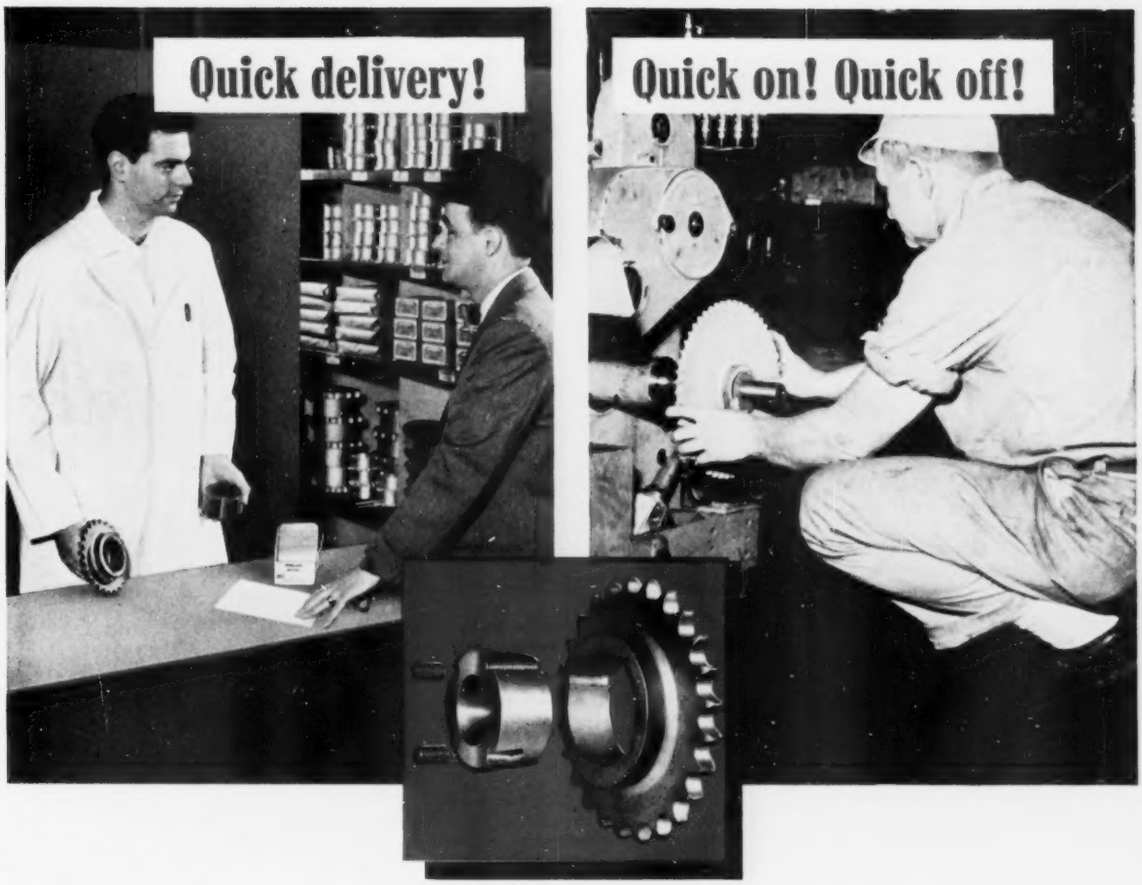
ROBERT J. VAN NOSTRAND (left), who has been appointed Midwest Representative of Pulp Sales Division. He was graduate of Institute of Paper Chemistry, has been assistant in Chicago office since 1950. He was in research and development at the Berlin, N.H., mill.
WILLIAM L. GILMAN (middle), who retires after 46 years with Brown as its Midwest man in the Dearborn St. headquarters in Chicago. His has been a varied and rich experience. Among other things, he was one of the planners and organizers of the LaTuque, Quebec, mill many years ago—a pioneer in the kraft field.
JOHN R. CRAWFORD (right), named Midwest Representative for Solka-Floc sales. He was with Turco Products in Chicago before joining Brown last year.

FOR CARPENTER TUBE DIVISION

HARRY A. HAUSER (left), appointed Pacific Northwest Sales Rep. for Carpenter Steel Co.'s Alloy Tube Division, with headquarters in Seattle, Wash., in offices of Electric Steel Foundry Co., affiliated in sales and development work. Mr. Hauser was Purchasing Agent for Hanford (Wash.) Plutonium Works of General Electric Co. for five years. He graduated from Penn State and held sales positions in San Diego, Cal. and Akron, O.
WALTER A. BAUMSTARK (right), named Carpenter Tube Division Midwest Regional Manager, St. Louis, Mo., and his ten state territory includes the pulp and paper states of Wisconsin and Minnesota. He graduated from Missouri School of Mines.

FOR SPROUT, WALDRON & CO.

ROBT. S. MAGRUDER, appointed salesman in Midwest and Mid-Atlantic states for Sprout-Waldron refiners. He was Groundwood Supt. at Sheboygan, Mich.—before that in New York mils.

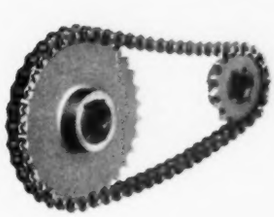


Link-Belt roller chain sprockets with taper lock bushings

HERE'S great news for users of roller chain drives! With the new Link-Belt taper lock sprocket, you don't have to fit the sprocket to the shaft. These sprockets with their taper lock bushings give you the equivalent of a shrink-fit on all standard shaft sizes.

Installation and removal are fast, simple. Set screws force and hold bushing in tapered bore of sprocket, *clamp* it tightly onto shaft. The *full length* of the bushing supports the sprocket on the shaft. Turning set screws in removal holes quickly releases it from shaft.

What's more, it's no longer necessary to wait while wheels are rebored. You can pick these sprockets right off the shelf at your nearby Link-Belt distributor or factory branch store. Available now are sizes for ½, ⅝, ¾, 1 and 1¼-in., single-width chains with other sizes to be announced. Ask for Bulletin 2449.



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AMMONIA VERSUS CALCIUM BASE

ACID MAKING—COOKING—SCREENING

By Loren A. LaFond

Sulfite Supt., Lebanon, Ore., Crown Zellerbach Corp.

EVAPORATION AND BURNING NH_3

By James H. Hull

Manager, Process Development, Central Research Dept., Crown Zellerbach Corp., Camas, Wash.

THE REASON FOR CONVERTING from calcium, or dolomite, to ammonia base for acid making is because ammonia is one of the best available soluble bases for acid making. This base aids in the recovery and evaporation of sulfite waste liquor, since the problems of scaling in the evaporators and ash in the furnace are minimized. It was known to start with that using ammonia would double the cost over lime rock or dolomite, but theoretically would realize a saving on the recovery of heat and SO_2 to offset this extra cost.

After Lebanon has operated three and one-half years with ammonia base, we can now sum up a pretty fair comparison in both cost and operating experience.

Acid Making

Raw Materials Handling: Lime rock or dolomite is shipped by rail, either in gondolas or box cars, and unloaded by lift trucks or crane equipment. Ammonia is shipped by rail in tank cars in anhydrous form and unloaded by its own pressure piped to an automatic system which converts it to aqua ammonia ready for pumping to the acid towers. There is a remarkable saving in the handling of ammonia over lime due to less than one-half the cost of unloading and with no waste whatsoever.

The handling of sulfur, of course, would remain the same, but due to the use of ammonia, we can lower the combine on the cooking acid from 1.25 to .85 percent, which in turn saves around 40 lbs. of sulfur per ton of pulp stock.

Acid Plant Operation: The use of ammonia in acid making has changed the operation considerably in respect to uniformity. The ammonia and water are metered to the towers, which gives us perfect control. With calcium or dolomite we had a variation in quality of lime rock and more so in burned limes. If an acid plant was under capacity, such as ours was, you are able to increase the production around 20% with the present absorption system, provided you have ample sulfur burning capacity, by converting to ammonia. The reason is that SO_2 is much more readily absorbed in ammonia and water than it is in lime and water. Another factor of pertinent importance is the insoluble materials that cause cleanouts, due to plugging, and in turn promote poor and sluggish operation, also the waste and disposal of the same that would be eliminated with the use of ammonia.

After three and one-half years of a uniform and smooth acid making operation, in comparison to the use of lime, it would be hard to go back to the old process.

LOREN A. LaFOND (left), Sulfite Supt., Lebanon, Ore. who discusses acid making, cooking and screening. JAMES H. HULL (right), Mgr., Process Development, Central Research Dept., Crown Z, Camas, Wash., who describes evaporating and burning. Mr. LaFond and Mr. Hull presented these papers at the Joint Supts. Tappi Coast meeting at Gearhart, Ore.

There are also other factors to consider, such as the hazards involved in the handling of these materials, both for the operators and unloaders, which have been eliminated by changing to ammonia.

Maintenance on Acid Plant Equipment: When converting from lime to ammonia, we encountered trouble for the first two or three weeks with leaks around the towers and acid lines gasketed joints. This was due to the dissolving of the calcium deposits throughout the system. After these leaks were repaired with new gaskets the maintenance problems were reduced to less than one-half. While on lime the acid pumps packing and sleeves were replaced every other week because of the insoluble materials passing through the system, cutting the sleeves and packing. After converting to ammonia the pumps need repacking only once in four to six months. Some acid plants are equipped with acid filters, or have plans for their installation. The ammonia base system would eliminate the necessity for the use of these acid filters.

Cooking

Ammonia Base versus Calcium Base Acid: In the sulfite pulping process we depend on good, uniform chemicals, heat and pressures with which to cook. In order to successfully do this job, care must be taken to use the proper amount of time to penetrate the wood before reaching excessive temperatures. This penetrating period is critical on calcium or dolomite base acid, but ammonia base acid is less critical, due to faster and more thorough penetration. The faster penetration will allow the digester to cook off 6½ hrs., against 8 hrs. with calcium using the same maximum temperatures and pressures.

The quality of the pulp remained about the same, except for more uniform bleachability. The pulp yield increased around six percent, and screening decreased sixty percent, again due to the faster and more thorough penetration of the wood. The dirt count increased around twenty-five or thirty percent because of the better penetration close to the inner bark around the knots.

The sulfite digester cooks appreciate cooking with ammonia base over lime base with regard to the more uniform acid and with less difficulty in cooking different species of wood. Ammonia

(Continued on page 71)

MR. LAFOND HAS given you highlights of his experience with cooking, screening and acid making with both calcium and ammonia base. I am going to summarize our experience to date with the evaporation, burning and sulfur recovery from the spent ammonia base liquor.

During 1951 Crown Zellerbach Corp. and Soundview Pulp Co. collaborated in the construction and operation of a pilot plant for evaporation and burning the spent liquor. This plant was located at the Lebanon, Ore., mill of Crown Zellerbach. The data obtained from this plant were used in designing the full scale plant which is now being put into operation at Lebanon.

Since the full scale plant has not been operating long enough to obtain reliable data I will summarize the pilot plant work and describe the full scale plant pointing out any differences in design from the pilot plant.

The pilot plant took the liquor from about 10 tons of pulp per 24 hours, concentrated it from 9 percent solids to 50 percent solids, burned it under a boiler and recovered the sulfur from the flue gases by scrubbing them with ammonia solution. This 10 ton plant was "blown up" to 50-60 tons in the full scale plant.

Flow sheets of the process for the full scale plant and the pilot plant are essentially the same. In fact almost all of the equipment used in the pilot plant is being used in the full size plant in some capacity.

The spent liquor supply for the evaporator drains from the blow pits to a collection sump. In tests using blow pit washing before operating the pilot plant we were able to recover upwards of 80 percent of the solids in the liquor provided the pits were padded with waste liquor and a wash of dilute liquor was used first. In effect it amounts to diffuser washing. In the full scale plant two large concrete sumps are provided; one for the weak wash liquor and one for the evaporator feed. The liquor is diverted from one to the other by a controller that opens one valve and closes another when certain temperatures are reached.

A pump takes the liquor from the weak liquor sump to a 50,000 gallon storage tank. From there another pump transfers it to the evaporator.

The pilot plant evaporator was a single effect Conkey Flat Plate Heating surface type (General American). All plate materials coming in contact with the liquor or vapor were of type 316 ELC alloy stainless steel. It had no condenser and was

(Continued on page 71)

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MR. LaFOND'S PAPER

(Continued from page 68)

base pulp is more easily washed, due to a lower ash content.

Digester Maintenance: The maintenance has been reduced to about half, or approximately the same as was experienced in the acid plant. The pumps can run more than twice as long without repacking, changing sleeves and replacing gaskets. Another trouble completely eliminated by the conversion to ammonia from calcium or dolomite, and particularly calcium, is scaling of heat exchanger tube, strainer, and other fittings in the system. The major maintenance cost on sulfite digesters is the linings; and this has prompted most inquiries concerning ammonia base. This subject can only be summarized, because of the short time to obtain an overall costwise statement. The experience so far was better than expected when converting to ammonia base with the single course lime base lining. The first six months of use with ammonia deteriorated this lining rapidly; therefore, we expected about half the regular life, which was from five to six years with dolomite. However, after it went through a spalling, the life held out to within about a year of normal life. The first double course soluble base lining with Furfural joints was installed. After one year of use, to our disappointment, the lining started spalling badly, prematurely. This was analyzed thoroughly and found to be caused by inferior face course brick that were under-burned. We expected to replace this face course before now, but it is still holding out. The second lining has been in about one year, but seems to be of much better quality brick, and appears to be holding out fairly well. It takes several years to round out an accurate account on digester linings, but we expect to come out in ten years, costwise, about the same as with dolomite. Calcium, however, has a longer lining life than dolomite, so would probably expect some higher lining cost for the ammonia base.

Ammonia Base Pulp as Compared with Calcium or Dolomite: The screening capacity was increased about 20% over dolomite stock, this of course being due again to the better penetration, with less fibre bundles. With the decreased fibre bundle by the better penetration, rejects in both knots and flat screen tailings were reduced around 60%.

One problem the ammonia base presented that we did not anticipate was the rapid growth of slime because of the higher nitrogen content. The screening system, before the ammonia, was flushed out with slimicides once a week, but after ammonia we were forced to add Bufen 30 to the system daily and BSM-11 in flushing every week-end cleanup. Once we had a definite regular schedule for treatment of this growth by the use of Bufen 30 daily, BSM-11 on week-end cleanup, and a complete boilout of the system three times a year, the problem was under control.

The change in behavior and quality of finished paper on the paper machines with ammonia base stock compared to dolomite was slight, except for more uniformity.

Conclusions

After summing up, the over-all picture in comparing ammonia base with dolomite base is as follows:

1. Ammonia doubled in cost over burned lime.
2. Sulfur saving around 40 lbs. per ton of pulp with ammonia.
3. More uniform operation, both in acid making and digester operation.
4. Increase in pulp yield.
5. Increased production due to shorter cooking time.
6. Decrease in percent screenings.
7. Easier bleaching.
8. Easier screening stock.
9. Increase in slime growth.
10. Less maintenance.

MR. HULL'S PAPER

(Continued from page 68)

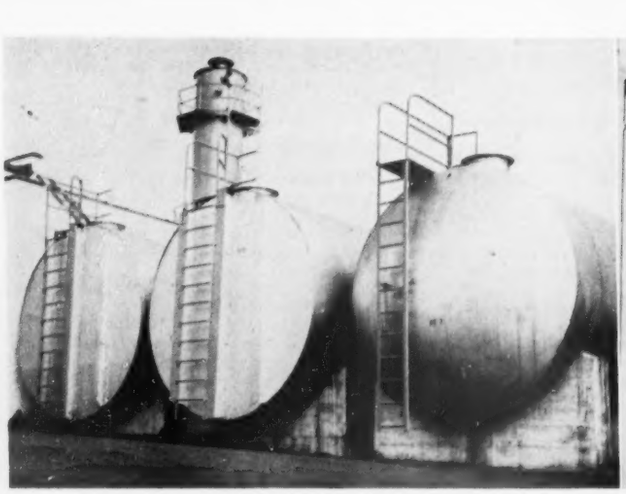
operated as a falling film evaporator. This evaporator is now the high temperature effect of a two-effect evaporator. The second effect operates under 27 inches of vacuum and employs natural circulation. It also has a flat plate heater. Pumps and controllers are provided for employing the Rosenblad method of channel switching for control of scale.

Liquor feed flow to the weak effect is automatically controlled to maintain a set level in the vapor head. Another float control in the high temperature effect regulates the liquor transfer between effects. A flow controller regulates the output rate. This rate is set according to the solids test of the product. Steam flow to the evaporator is regulated by an automatic flow controller. From the evaporator the 50 percent solids liquor goes to a 15,000 gallon storage tank. From this tank it is pumped to a 1,000 gallon tank that supplies the two boilers under which the liquor is burned.

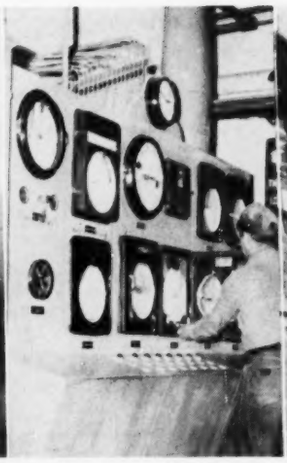
One of the boilers used is the one that was used in the pilot plant work. This is an old water tube unit with a dutch oven ahead of the boiler. The grates have been removed and some brickwork added to give a furnace of proper dimensions. It is equipped with an air preheater, an induced draft fan, and dampers for combustion control.

The burners used in both the boilers are steam atomizing burners with the liquor on the inside and the steam outside. The liquor discharges through a central opening and the atomizing steam comes in through several radial openings at right angles to it. Liquor flow to both burners is regulated by flow recorder controllers.

The other boiler used has no air heater and is not equipped for sulfur recovery. It is equipped with a dutch oven for hog fuel burning and facilities for burning oil. However, since the combustion chamber where the liquor is sprayed in



THESE NEW SHINY AMMONIA STORAGE TANKS, each 30,000 gals. capacity are new sights at Wausau Paper Mills, Brokaw, Wis. Note the new absorption tower in background. Some sulfite mills, changing to ammonia base, can convert Jenssen towers.



MIDDLE VIEW SHOWS PANEL BOARD and test station in new ammonia cooking system at Wausau Mills. Fischer-Porter and Foxboro instruments may be identified on this board. There are a variety of instruments and push buttons.

HERE (RIGHT) WAUSAU MILLS OPERATOR is checking recirculation reading at one of three Fischer-Porter Flowrators. Also shown is a section of large stainless steel sulfur gas line which carries to the base of the absorption tower.

WAUSAU'S CHANGEOVER TO AMMONIA

INSTRUMENTATION REMOVES GUESSWORK

In THE CHANGEOVER from calcium to ammonia base pulping—CAO to NH_3 there is generally quite a job of instrumentation to do. New instruments and new arrangements are necessary. The traditional two Jenssen towers in sulfite mills may be converted to new uses. One could be lined for absorption and the other used for limerock storage, or both could be used for absorption of ammonia, water and sulfur dioxide gas. The towers would require Stoneware or tile linings. In the CAO system, rock in the towers is dissolved with water and SO_2. Spencer Chemical Co., supplier of ammonia to sulfite mills, has set up a department to assist mills in conversion of their towers.

One of the first mills in the United States to change over from CAO to NH_3 base is the Wausau Paper Mills Co., of Brokaw, Wis. It makes 100 tons daily of bleached sulfite ledger, bond and other papers. The changeover to ammonia not only has permitted this mill to vary its wood species, but is said to have facilitated some increase in production. This would not necessarily follow in any mill that changes over.

With this article are published pictures of Wausau's new acid plant and other facilities designed for the ammonia base process at that mill. Engineering and instrumentation removed old-fashioned guesswork methods.

The new absorption tower in this mill is a 48 ft. steel cylinder tile-lined, 6 ft. in diameter, rising well above the main building, which encases layers of glazed spiral rings. Fifty-four thousand small mixing units, stacked end on end, form a filter bed where controlled portions of sulfur gas and aqua ammonia merge with water shower sprays, forming high grade cooking acids. From an outward appearance, circulating lines, port inlets, circular ramps and ladders are conveniently located at strategic points for easy maintenance inspection and control.

Foxboro, Fischer-Porter and Leeds-Northrup furnished instruments for:

Liquid level control at the burner; automatic temperature control and recorder at combustion chamber; Rotametered water control at spray cooler; sulfur gas flow recorder to tower, plus gas temperature regulator; Rotametered control of ammonia, water, and recirculation lines; small pond cooler and pump system for converting anhydrous ammonia to aqua ammonia; and automatic level control valves to acid storage tanks, plus auxiliary level gauges at all storage points.

The completely renovated features of the new plant, plus time-saving push button control, also prompt a good housekeeping climate. An operator has plenty of time to keep the department clean.

DAVID B. SMITH (left), is President and General Manager of Wausau Paper Mills Co., Brokaw, Wis. It is a few miles north of Wausau in Marathon county. CECIL TAYLOR (right), is General Superintendent at the Wausau Mills. Many other new improvements have been made generally at this mill, including an extensive paint-up job.

MR. HULL'S PAPER

(Continued from page 71)

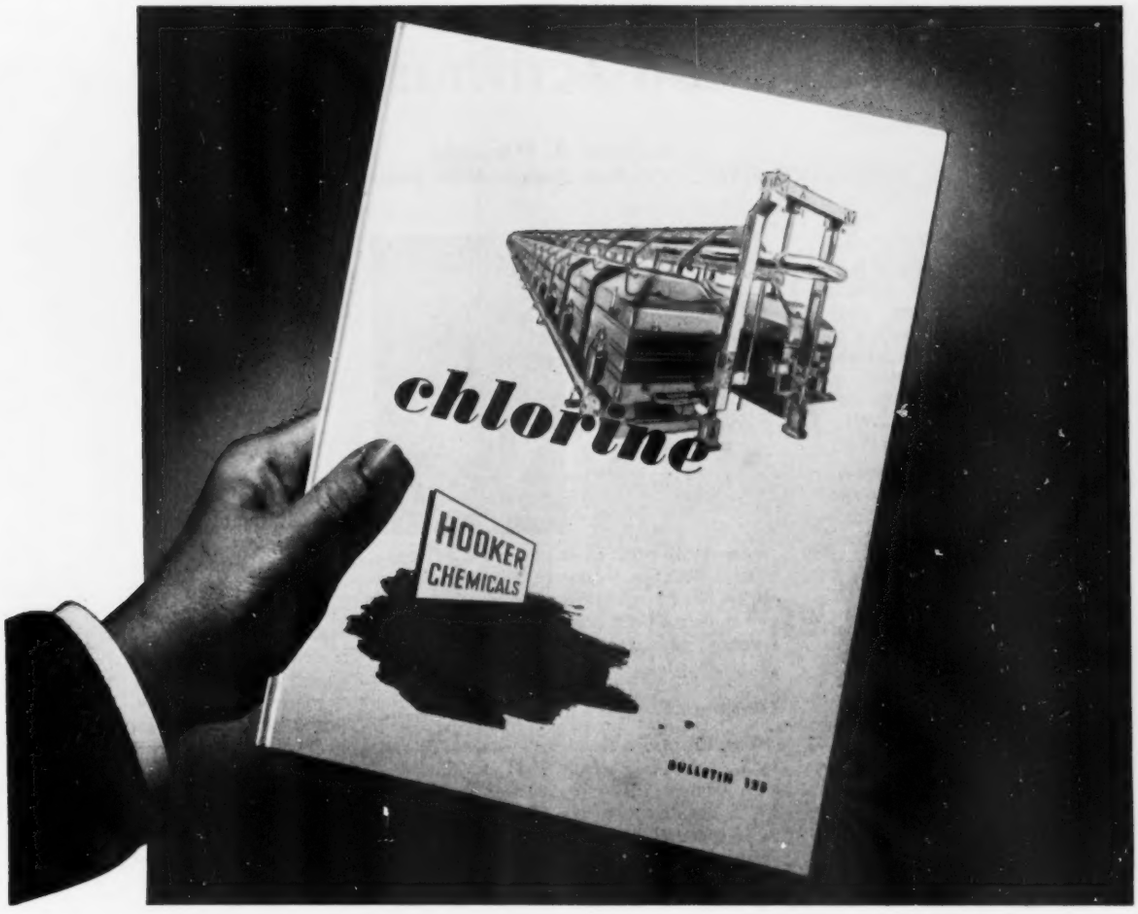
has a water wall it is necessary to keep a hogged fuel fire going in the dutch oven. Liquor is burned at a constant rate and the swings in steam demand are taken up by varying the hogged fuel feed. Only one of the boilers burning liquor is equipped for sulfur recovery. The liquor is split about half and half between the two boilers.

The sulfur recovery system consists of one cooling tower and two absorption towers. The two absorption towers operate in parallel. One of the absorption towers was used as the cooling tower in the pilot plant.

The cooling tower is of wood stave construction 8 ft. 4 in. I.D. 34 ft. high packed with 24 ft. of 3-inch spiral tile. It cools the flue gas from air heater temperature to 104° F. Cooling water is supplied at the top and is discharged from the bottom at about 200° F. at this temperature very little sulfur is lost.

The absorption towers are 5-ft. inside diameter wood stave towers packed with two 5-foot sections of 3-inch spiral tile. The absorption solution of ammonium sulfite bisulfite circulates over the bottom section and is pumped through a heat exchanger after each pass over the packing. Seventeen percent ammonia solution is added at the suction side of the recirculator pump. This feed is regulated by a pH recorder controller. Makeup water equivalent to the acid sent to the acid plant is added above the top section. The purpose of adding water at that point is to recover any ammonia stripped from the scrubbing solution. Acid from the towers is taken after the heat exchanger and sent to the acid plant where it is added to the water going to the barker tower.

As I stated in the beginning the plant has not been operating long enough to obtain any reliable data. However, based on our pilot plant work we expect to obtain enough steam from the burning to do the evaporating. We also expect to recover about 80-85 percent of the sulfur contained in the liquor fired to the furnace that is equipped for sulfur recovery.



How to use and handle chlorine

If you buy, use or handle chlorine, this new 76-page manual contains useful information for you. Contents include:

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- **Pulp chlorination**
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- **Analytical procedures for hypochlorite solutions**
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MUTUAL SECURITY PROGRAM

A REPORT ON ITS RECENT ACTIVITIES IN FOREIGN LANDS

By Roland A. Packard
Assistant Chief, Forest Products Branch, MSA, Washington, D. C.

(*Written Especially for* PULP & PAPER)

A YEAR AGO Dr. Joseph E. Atchison, at that time chief of the Pulp and Paper Branch of the Mutual Security Agency, presented through PULP & PAPER a picture of what the Marshall Plan, under the former Economic Cooperation Administration, had accomplished in increased pulp and paper production in Western Europe. The Marshall Plan was succeeded in Jan. 1951 by the Mutual Security Program, which brought under the coordination of its director, the military, the economic or "defense support," and the technical assistance programs. I will continue the story of overseas pulp and paper production under this program.

I wish to preface my report with the words of President Eisenhower: "No nation's security and well being can be lastingly achieved in isolation but only in effective cooperation with fellow nations. . . . The United States and our valued friends, the other free nations, chose one road; the leaders of the Soviet Union chose another. We are prepared to reaffirm with the most concrete evidence our readiness to help build a world in which all peoples can be productive and prosperous."

The Mutual Security Program has been built upon the above premise. The major part of it, up to the present, essentially has been concerned with Europe. The industrial part covers manufacturing of pulp, paper, textiles, steel, aluminum, plastics, power, etc. In essence, the progress in pulp and paper production in Western Europe has consisted of modernization of the machinery, as well as the purchase and installation of new digesters, paper machines and auxiliary equipment, wherever the economic needs showed serious deficits at a time when several types of pulp and paper were not available, or if in supply, could only be purchased at very high prices.

The program is nearly finished. There

MR. PACKARD, Assistant Chief, Forest Products Branch, Industry Division, MSA, who wrote this report for PULP & PAPER.

remains the final cleanup period of technical assistance to insure that machinery which has been improved, or new machinery that has been put into operation, performs at as high a level of efficiency as is practical, under existing conditions.

European Program

The European financing was as follows by ECA and MSA from 1948 to 1953:

In Austria, US $3,727,000 was authorized by ECA/MSA. It was the only country in Western Europe which had both availability of pulpwood and technical know-how combined. To a lesser degree of importance was the critical shortage of kraft pulp and paper wrapping and paper bags, which were being made out of sulfite pulp, the weakness of which made it necessary to use two pounds where one pound of strong kraft pulp would have sufficed.

In Italy, US $1,594,000 was authorized by ECA/MSA. This country has approximately 270 paper mills, mostly of narrow widths and operating at about half the average speed for manufacturing the same papers in the U.S., and had special situations where assistance was required. Two of the drawbacks in Italy today are high cost of production and scarcity of pulpwood.

In Portugal, US $4,340,000 was authorized by ECA/MSA. This was a unique situation where a critical shortage of kraft pulp had existed for over 15 years. The financing privately and assisted by MSA was to encourage a group of Portuguese who have persistently plodded ahead against great obstacles, commencing in 1941, and have been rewarded as of today in the complete operation of both the pulp and paper mills in their homeland.

The real meaning of the two words "Mutual Security" must not be forgotten. While we are helping peoples in foreign lands to help themselves, we are also working to secure a formidable frontier of protection for the allied nations against the inroads of Communism. The raising of the standard of living of the people of any nation, like the increasing of a nation's military strength, is in proportion to the accomplishments in industry, education and health. It has been recognized by many people in the U.S. and Europe that the standard of living of any nation is closely allied with the per capita consumption of paper. This might also be said of some other commodities, but certainly pulp and paper is a good yardstick.

It is interesting to reflect on the impact of high living standards, as well as low living standards, on the security of any nation in the world in which we live today.

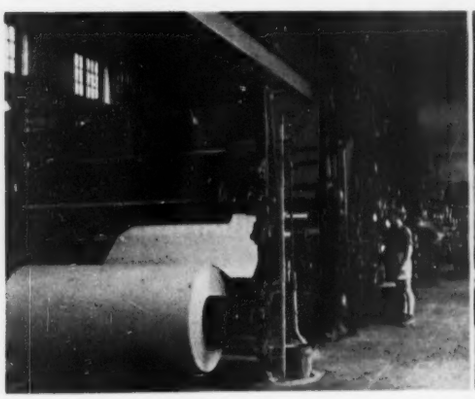
Paper Consumption vs. Security

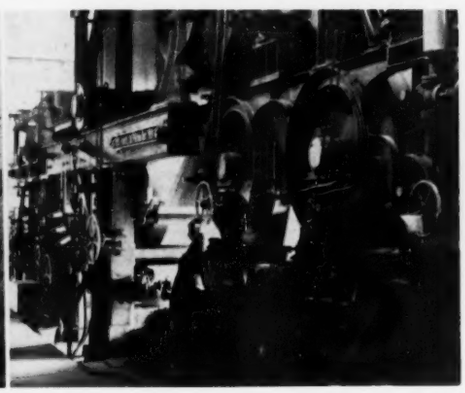
The bar graphs published with this article show the immense variation in the

LEFT: U.S.A. FUNDS AIDED this FRANTSCHACH Paper Mill in Lavant Valley of Austria. In this operation 30 rolls of paper per day are made, each weighing 700 kilograms. For more details on this production in Austria, see PULP & PAPER'S WORLD REVIEW NUMBER, Austria Section, recently issued.

MIDDLE: THESE WOMEN are working in finishing department of GANAHL & CO. Paper Mill in Austria. Paper rolls in back of them are labeled for destination in Beirut, Syria.

RIGHT: THIS PICTURE SHOWS A GERMAN VOITH machine in the Ganahl & Co. Paper Mill in Austria where much modernization was financed by U.S. aid.





Paper from native fibers

PULP AND PAPER INDUSTRY DEVELOPMENT

NEW YORK, Feb. 28—A plan to help to develop the pulp and paper industry in Central and South America, Africa, and Asia with British and American money and skill has been announced here.

Lyddon and Company, Limited, wood pulp importers operating in Britain and the United States, and their American affiliates through common ownership, Parsons and Whittemore, said they were launching a programme to set up complete pulp and paper mills in those territories.

Mr. Karl Landegger, president of Parsons and Whittemore, said the companies' joint organization would develop projects based on pulping of short-fibred material found in many of the areas as well as offering equipment using standard grades of wood pulp.

He added that the organization would conduct preliminary surveys, deliver equipment that could not be produced locally, and supply technicians until local workers could take over. It would also assist local groups in obtaining raw materials and chemicals and selling the output.—*Comtelburo.*

As appearing in THE TIMES LONDON MONDAY MARCH 2 1953 March 2

As appearing in The New York Times Feb. 27

World Program Based on Point 4 Developed to Build Paper Mills

Parsons & Whittemore Reveals It Would Be Active in South and Central America as Well as Africa and Asia

A plan to engineer, develop and build complete pulp and paper mill projects—in Point Four style—in various area of the world was announced yesterday by Parsons & Whittemore, Inc., of this city, supplier of pulp, paper and machinery for the industry.

In making the announcement Karl F. Landegger, president, said that the concern, which observes its centennial this year, would be active in South and Central America, Africa and Asia to develop projects based on pulping of short-fibered material found in many of these countries, in addition to offering equipment utilizing standard grades of woodpulp.

The company will contract to build a complete mill with any specified daily production and quality and will assist local groups in technical and management matters as well as financing.

Parsons & Whittemore recently concluded an agreement with the St. Regis Paper Company, a major producer of pulp and paper, calling for cooperation between the two concerns in the development of pulp and paper mills outside the United States. Under this agreement St. Regis would consider undertaking management contracts in mills to be developed by Parsons & Whittemore, thus assuring capacity operation of a salable product.

Parsons & Whittemore, Inc., which is affiliated through common ownership with Lyddon & Co., Ltd., London, is supported in this field by The Black-Clawson Company, Hamilton, Ohio, paper-machinery manufacturer, and its divisions — Dilts Machine Works, Fulton, N. Y., and Shartle Brothers Machine Company, Middletown, Ohio, and their subsidiary, the B-C International, Ltd., London.

In Great Britain the organization is associated with Millspaugh, Ltd., Sheffield, pioneer in the suction press and vacuum pick-up in the paper industry, and its Canadian subsidiary, William Kennedy & Sons, Ltd.

Parsons & Whittemore will conduct these operations, according to Mr. Landegger:

¶Make a preliminary survey and prepare an appraisal report.

¶Engineer the complete project.

¶Produce and deliver all the pulp and paper machinery and other necessary equipment that cannot be produced in the country where the mill is to be built.

¶Supply the necessary trained personnel to assure proper operation of the project until local workers can take over.

¶Assist the local group in obtaining financing over a period of years.

¶Assist the local group in obtaining the necessary raw materials and chemicals to operate the mill after it is built, as well as sell the output through Parsons & Whittemore's own offices in fourteen countries.

The various companies with which the concern is affiliated are the major suppliers of machinery for the pulp and paper factories projected by it. Their engineering staffs will be available for these projects in order to deliver a going plant to the clients.

The Parsons & Whittemore-Lyddon organization also maintains the Pulp and Paper Research Company, Ltd., in London.

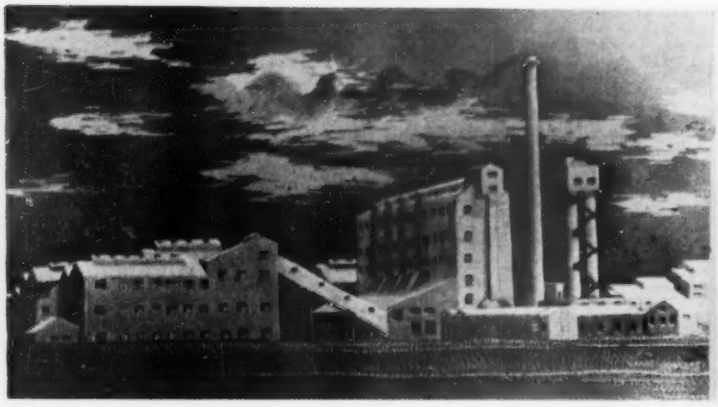
Parsons & Whittemore has a contract for a mill in Brazil to manufacture bleached sulphite from eucalyptus trees. Also being completed is a pulp and paper mill in Costa Rica using abaca fiber as a raw material.

100th ANNIVERSARY

LYDDON & CO.
35 New Bridge Street, London EC4, England

PARSONS & WHITTEMORE
250 Park Avenue, New York 17

A WORLD-WIDE ORGANIZATION



LARGEST BAGASSE PULP MILL in world in Hsinyin, Formosa (Taiwan). This mill was built with assistance of Cellulose Development Corp. of England and uses Pomilio cooking process. For more details on these mills in the National Chinese-held country see the TAIWAN section of the WORLD REVIEW NUMBER of PULP & PAPER for 1953, recently issued.

LOOKING OVER A BEATER IN VAN HWA PAPER MILL, in Formosa (Taiwan). Left to right: Mr. PACKARD, the author; VAL DE BEAUSETT, Resident Mgr. for J. G. White Engineering Corp. and the Chinese Mill Manager and Superintendent. Now assisting on staff of this mill is KARL W. FRIES, formerly Research Director at the Rhinelander Paper Co., in Wisconsin.

consumption of paper among 17 nations.

It can be seen that countries in the lower half of the graph (below Russia) are vulnerable to Communist pressure within, or both within and from outside their borders. Countries above the paper consumption level of Russia currently have Communist influence partly under control, or under complete control. Those nations nearest the Iron Curtain require a relatively higher standard of living than currently obtains in order to insulate themselves against inroads by Communists. Note the positions of Indo-China with its hot war and Thailand with its precarious position. The importation of paper annually in Thailand is 22,000 metric tons (24,200 short tons). Domestic manufacture is only 1,200 metric tons (1,300 short tons) or about 6 percent. Pulpwood on the stump, and lignite and waterfalls, for heat and power respectively, are available in abundance.

While the rehabilitation of Western Europe's pulp and paper industry has nearly been completed, these industries are yet a problem in the strengthening, economically and militarily, of the Far East.

Program in Formosa

In Formosa, a program of help in rehabilitation of many industries is under way. This program includes assistance to the farmer toward raising more and better products. It includes betterment of educational facilities, improvement of medical attention for the nine million people living on the sizable island, rehabilitation of the railroad, the electrical power system, communications facilities, etc.

Formosa had been under the domination of Japan for 50 years, ending with the close of World War II in 1945. During the 1920's Japan entered into a program of colonization of this 240-mile long island to absorb some of the rapidly expanding population of her homeland.

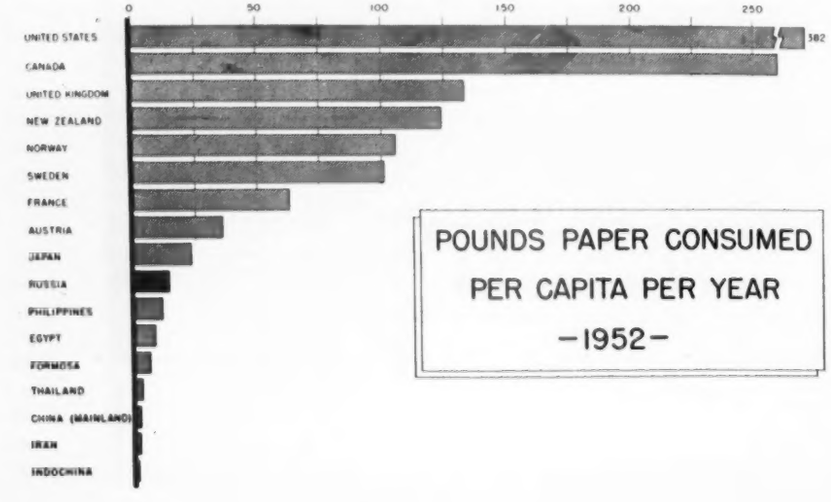
Industrial expansion was pushed. Pulp and paper manufacture being an important part of this industrial plan, there were built 29 pulp and paper mills of many varieties, all the way from a few hand sheet mills to a large pulp mill which if built today would cost the equivalent of ten million U.S. dollars. Some of these mills were bombed out during the war, but since have been repaired by the Chinese and are operating as well as can be expected considering the obsolesence of some equipment and lack of up-to-date technical know-how.

A program has been authorized by MSA for expenditure of US $1,250,000 for the purchase and installation of new machinery in several of the larger paper mills in Formosa, in order to approach modern standards of production of pulp and paper.

Philippines Plans

In the Philippines, the consumption of paper is 80 thousand metric tons (90,000 short tons) annually and domestic manufacture is only 12,000 tons. Private interests in cooperation with the Philippine government have active plans which are now maturing to erect a pulp and paper mill on the Island of Mindanao in the Bislig area. Plans involve mills which will produce approximately 200 metric tons of pulp and paper per day or 60,000 tons per year. This amount will nearly put into balance consumption and production.

The entire amount of new capacity as a result of the total program amounts to approximately 190,000 short tons of pulp and 180,000 tons of paper annually. When compared to current U.S. output, it is only 1.2 percent of our pulp production, and .7 of one percent of our paper production. The production of paper and board in the U.S. since 1932 has about doubled. The very momentum of this abrupt rise indicates most clearly the increased purchasing power of the average American, which again indicates the additional upward surge of our own standard of living, because that same progress is seen in most of the important industries in the nation.

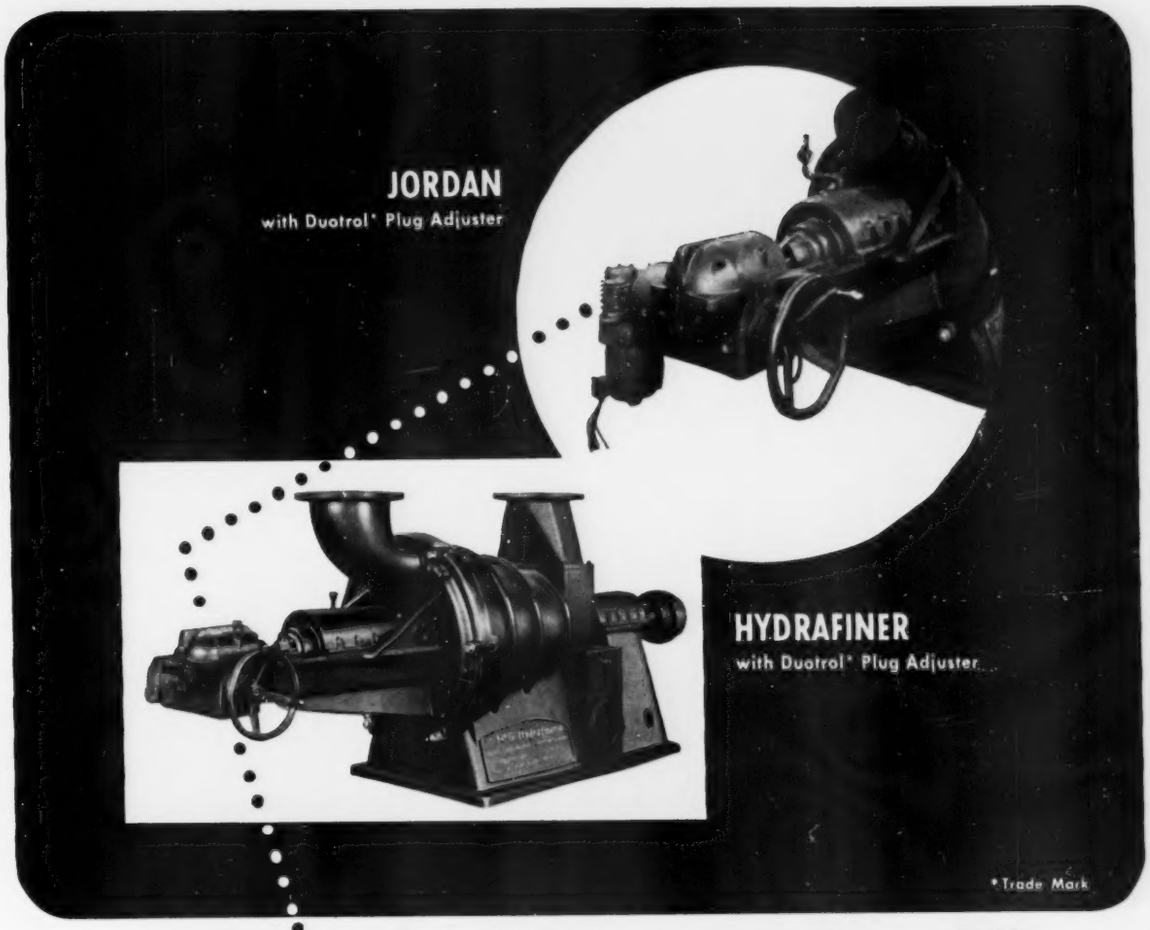


Farewell For McCall; Stays on Racquette Board

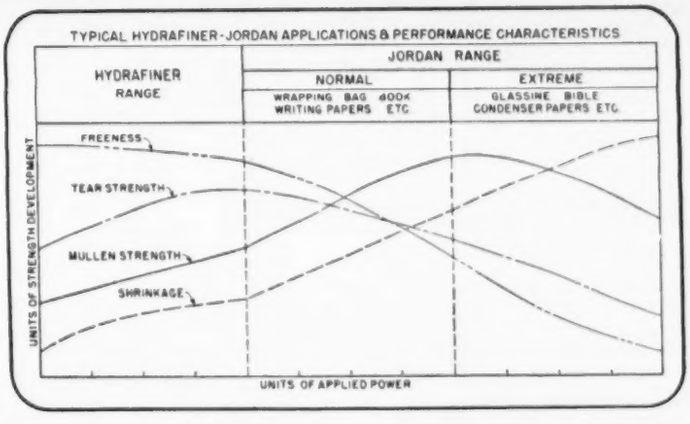
Don McCall, new assistant general manager of Everett Pulp & Paper Co., Lowell, Wash., division of Simpson Logging, was tributed at a farewell dinner by New York friends June 17 and presented with gifts of a movie projector and screen.

Mr. McCall told of his regret at leaving Racquette River Paper Co. and revealed that he had been asked to remain on the board of directors of that company by the Sisson family. He paid high tribute to his "teacher"—Rufus Sisson—and 24 years with the company.

Tom Burke, of the Sulfite Mfgrs. Association, Dale Sisson and others made talks.



Balanced Stock Treatment Pays Off



A moment's study of the chart will graphically bear out the claim that balanced stock treatment pays off.

As shown by the "curves," Hydrafiners® and jordans each has a particular job to do and does it.

BLACK-CLAWSON

SHARTLE BROS. MACHINE DIVISION • MIDDLETOWN, OHIO

NEW CONTAINER FOR FRUIT

WILLIAM F. LEICESTER (left), President, Chemical Division, The Borden Co., and HERBERT CLARKE (right), Vice Pres. and Pacific Coast Mgr., were snapped by PULP & PAPER as they talked over new paper uses in West Coast fruit and process packing trade at Los Angeles. Borden urea resin adhesives are used with kraft paper glued to each surface of a thin wood veneer to make cheaper and stronger container than regular wood boxes, and holds up well under cold storage.

Elk Falls Expansion Made Possible by Deal

Expansion of the Elk Falls Co. mill at Duncan Bay, Vancouver Island, B.C., from 70,000 tons to more than 100,000 tons annual production will be one of the first sequels of Crown Zellerbach's acquisition of Canadian Western Lumber Co., according to J. D. Zellerbach and Henry J. Mackin, presidents of the two firms.

Elk Falls Co. has been operated since its inception under the joint ownership of Canadian Western and Pacific Mills, a Crown Zellerbach subsidiary with principal operations at Ocean Falls, B.C. Expansion at Elk Falls, which at present produces newsprint and will eventually have a kraft mill added, can be accomplished without new financing, according to Mr. Zellerbach. Crown Zellerbach has about $25,000,000 cash on hand.

According to Mr. Mackin, the deal will make Crown Zellerbach second only to Weyerhaeuser Timber Co. in the extent of its Pacific Coast timber resources.

PROMOTIONS AT BATHURST POWER & PAPER CO. have been announced, involving R. H. Christian (left), who becomes Executive Vice-Pres., and E. S. Kirkland, who has been elected Secretary. Mr. Christian was formerly Secretary and Treasurer and continues as Treasurer. Both appointments were announced by President R. L. WELDON.

Boex and Buchanan Are New Marathon Directors

Merging of Northern Paper Mills, Green Bay, Wis., by stock exchange, six Marathon common and five Marathon preferred to one each of Northern, was consummated June 23.

Milan Boex, Northern president and general manager, became a Marathon vice president. Mr. Boex and William E. Buchanan, also a Northern director, both became Marathon directors. President John Stevens Jr., Marathon president, said Northern becomes a Marathon subsidiary but "business as usual" continues for both.

Hooker Buys Firm In New England

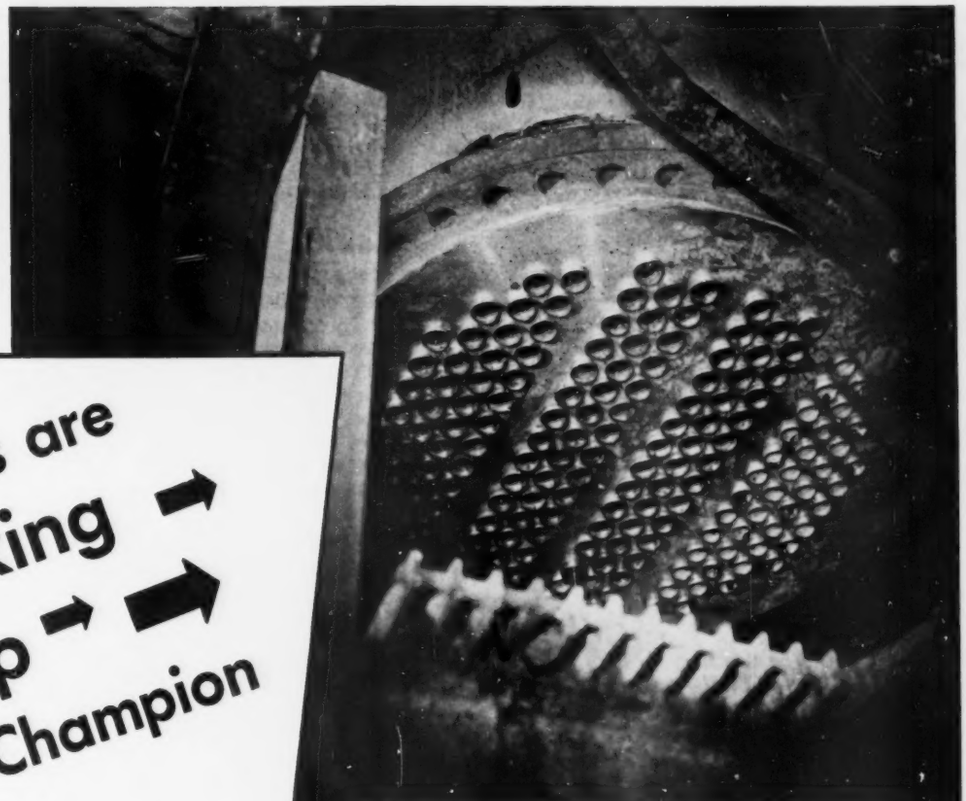
Marble-Nye Co., Worcester, Mass., manufacturers' agents for chemicals, has been purchased by Hooker Electrochemical Co. George J. Bruyn, formerly administrative assistant to the vice president and general sales manager of Hooker, will be vice president and manager of Marble-Nye. Walter B. Jenkins, formerly president of Marble-Nye, will continue as a director. Henry L. Gilson will be retained as treasurer and clerk. R. L. Murray, of Hooker, will be president, and B. Klaussen, of Hooker, vice president.

Ex-St. Regis Man Coordinates Olin Sales

James Wallace has been placed in charge of coordination of sales and production activities of Olin Industries' forest products division, at Shreveport, La., with title of merchandise manager. He will be responsible for development of new products and markets, with title of merchandise manager. His appointment does not affect H. W. Maddox, sales manager.

Olin has embarked on an extensive modernization and rebuilding of the division's sawmill at Huttig, Ark.

Mr. Wallace was west coast sales manager of the kraft paper and board division of St. Regis Paper Co. Before that he was on the Tokyo staff of Chase National Bank.



Things are Looking up at Champion

—since they installed these INCONEL preheater tubes

FIRST TRIED in 1949, Inconel preheater tubes have proved so successful that the CHAMPION PAPER & FIBRE COMPANY now plans to install Inconel tubes in the remaining 14 preheaters at their Canton, N. C., mill.

Four years and one month . . .

That's how long it's been since the Champion Paper & Fibre Company installed a trial set of Inconel® tubes in a digester liquor preheater at their Canton, N. C., mill.

Like many mills, they'd been pushing equipment pretty hard to keep up with production schedules. And they kept up with the work, all right—but their preheaters showed the strain.

No wonder! They were going twenty-four hours a day, seven days a week without let-up. Inside the tubes — sulfate cooking liquor. Outside — pressurized steam at 354° F.

Ordinary tubes just couldn't take it. Twelve months and they were about done—corroded so badly they had to be scrapped.

It was in June, 1949, that Champion decided to try Inconel tubes in one preheater . . .

Today — more than four years later — *those Inconel tubes are still in use.*

But long life isn't their only advantage, as Champion has discovered. Inconel tubes also stay clean longer. They can be used almost six weeks between washings, while the old tubes needed a good cleaning out every three weeks. Saving that extra washing cuts cleaning costs in half, and in the time saved, Champion runs 17 more tons of pulp!

Champion is so pleased with the way this one preheater has served, that they're planning to re-tube the remaining 14 with Inconel.

Maybe you'd like to follow their lead. If so, it is advisable to place equipment orders, as approved by N.P.A., with your supplier well in advance of scheduled use. Distributors of Inco Nickel Alloys can supply the latest information on availability from warehouse and mill. The International Nickel Company, Inc., 67 Wall Street, New York 5, N. Y.

Inco Nickel Alloys

MONEL® • "R"® MONEL • "K"® MONEL • "KR"® MONEL • "S"® MONEL
INCONEL® • INCONEL "X"® • INCONEL "W"® • INCOLOY®
NIMONIC® ALLOYS • NICKEL • LOW CARBON NICKEL • DURANICKEL®

Personals

NORTHEAST NOTES

DR. HAROLD G. WILM has been named associate dean of biological sciences and graduate studies at State University of New York College of Forestry at Syracuse. He is currently chief of division of forest influences, U.S. Forest Service; will take his new post Sept. 1. Other Syracuse appointments: *JEROME G. KOVALCIK*, assistant professor of forest extension;

RICHARD E. PENTONEY, instructor in wood technology; and *DR. CHARLES H. LEIGH*, research assistant in forest chemistry.

CHARLES H. CORNELL was elected treasurer, *SARAH L. CLAPP*, director, and *WARREN F. WITHERELL*, assistant treasurer, of Tileston & Hollingsworth Co., Boston, Mass. Announcement was made by *EUGENE H. CLAPP*, executive vice president.

LYNWOOD S. HATCH was elected vice president, and *WILLIAM D. DURYEA*, vice president in charge of purchasing and sales, was elected a member of the executive committee of the directors of Penobscot Chemical Fibre Co. *LOUIS J. FREEDMAN* was named vice president of Penobscot Development Co., wholly-owned timber subsidiary.

WILLIAM H. ANDERS has retired as active manager of the East Pepperell, Mass., mill of St. Regis Paper Co., and has been succeeded by *ROBERT A. CHASE* as resident manager. *RUSSELL HAMILTON*, formerly general superintendent, is now mill manager. Mr. Anders was formerly president of the Nashua River Paper Co. and joined St. Regis in 1946. He is continuing in an advisory capacity. Mr. Hamilton, native of Virginia, was named "Papermaker of the Month" by Noble & Wood's *Agitator*.

RALPH PRINCE, formerly with American Cyanamid Co.'s paper chemical department in the Northeast, has joined J. & J Rogers Co., Au Sable Forks, N.Y., as technical superintendent. With him as paper mill superintendent is *TOM PARKHILL*, formerly with Strathmore Paper Co.

GEORGE B. MARTIN, formerly representing General Dyestuff Corp. in the Northeast, has joined F. C. Huyck & Sons Co., Rensselaer, N.Y., where he will be an associate of *FRED SODERBERG*, with whom he was formerly associated at General Dye.

W. DOUGLAS SOMMERVILLE has been named vice president of production for Eastern Corp., Bangor, Me., according to *CHARLES G. PAINE*, vice president and general manager. Mr. Sommerville has been with Eastern since 1911, in 1928 was made manager of paper manufacture and more recently has been general superintendent of the Brewer, Me., plant. *DONALD W. DANFORTH* is new general superintendent at Brewer, and other changes include the move of *FREDERIC H. STETSON* to chief engineer, and *LAWRENCE C. LYNCH* to service director.

J. ROBERT BONNAR has been named sales manager, dyestuff division, General Dyestuff Corp. Mr. Bonnar has been with General Dyestuff since 1935 and formerly was technical director for American Printing Co., Fall River, Mass. Other GDC appointments include: *HENRY F. HERRMANN*, general market manager; and *DONALD E. MARNON*, manager, technical department. *DR. PAUL A. GOODLOE* has been named assistant director of research and development for Brown Co., Berlin, N. H., according to *DR. GEORGE A. DAY*, director. Other moves announced by Dr. Day as a series of steps in the expansion of the department include naming of *ROBERT A. WEBBER* as administrator, and *DOUGLAS H. MCMURTRIE* and *HAROLD R. TITUS* as senior research associates. Dr. Goodloe has been in charge of technical service for Solka-Floc, Brown's high alpha cellulose product, and is a graduate of John Hopkins University.

FRANCIS W. PLOWMAN, vice president, has been appointed assistant to the president, *THOMAS B. McCABE*, of Scott Paper. He had been general sales manager. *D. A. PROUTY* is new assistant vice president of public relations. He is succeeded as national retail sales manager by

PAUL BROWN. G. A. DUFF continues as manager of public relations. The moves are part of a program to hit sales of $300,000,000 annually by 1958.

JOHN B. CALKIN, chemical engineer and consultant, and until recently with the University of Maine where he was director of the department of industrial cooperation and secretary to the Pulp & Paper Foundation, has been named assistant to the president, Foster D. Snell, Inc., New York City. Mr. Calkin will also be director of market research for Snell, a company with which he has had a long-time connection. Mr. Calkin is an associate professor of chemical engineering, he has been connected with several companies in the industry for more than 25 years.

PLEASURE AT A SATISFACTORY AGREEMENT was expressed by C. C. CRUSIUS (left), Parsons & Whittemore, and PAUL LIPPKE, Hygrotester Inc., at a dinner given in Mr. Lippke's honor at the Liederkrantz Club in New York City, June 15. Mr. Lippke was returning to Germany after his first visit to the United States, during which he firmed an agreement with Parsons & Whittemore for representation of Hygrotester's moisture testing equipment in South America.

M. T. LITTON (left), with Vulcan Copper & Supply since 1947, has opened a new office in Houston, Texas, to represent that Cincinnati engineering and construction company for chemical plants. JOHN A. REAGAN, JR. (right), has been relieved of personnel work to devote full time as Sales Promotion and Adv. Mgr. for Sonoco Products Corp., Hartsville, S. C.

MIDWEST NOTES

PHIL BUDD, assistant to the manager of manufacturing, *MACE HARRIS*, represented The Northwest Paper Co., of Cloquet, Minn., at the Atlanta superintendents conclave and like some others from far north, he wasn't entirely prepared for the 99 degree weather.

CHARLES H. SAGE, vice president of Kimberly-Clark, was really having a busy two weeks in late June. He was at a Washington, D.C., meeting one weekend. Then in one single week, he presided at two successive NAM forestry meetings in New York, then presided at the Forestry Industries Council meeting and the Farm Woodlot Conference, both in Chicago, and hopped to Kapuskasing, Ont., for the 25th anniversary open house of K-C's newsprint mill there. The next week back to Higgins Lake, north Michigan, for an American Forestry Assn. meeting.

HAROLD SKINNER, pulp superintendent, Marathon Corp., Rothschild, Wis., and Mrs. Skinner were joined by their daughter, Geraldine, for a family reunion at the Supts. convention.

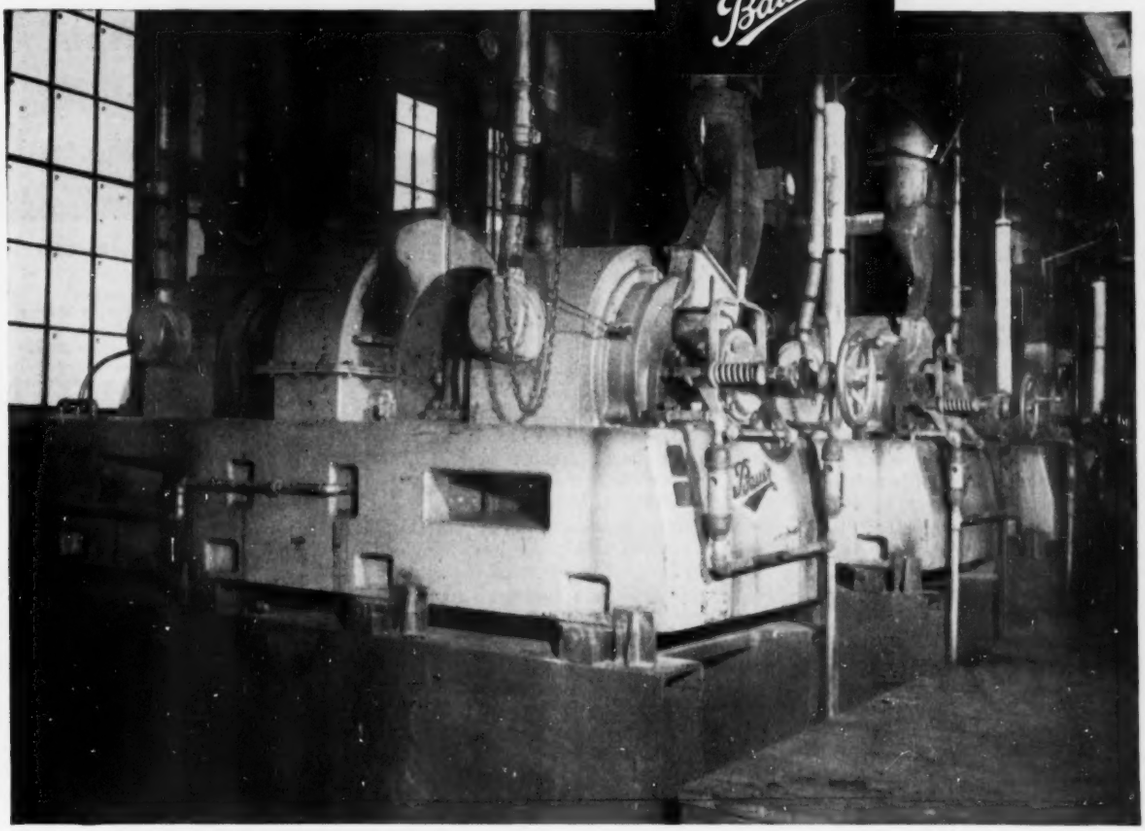
GEORGE A. HERMANN, vice president and sales manager of Hermann Mfg. Co., Lancaster, O., was able to catch his daughter, Connie's graduation at Ohio State between industry meetings. She majored in physical ed. and has a position in Leary, O., schools.

TOM CARTER, for many years chief engineer with Cameron Machine in Brooklyn and Chicago and recently with Bagley & Sewall in Watertown, N.Y., has joined Champion Paper & Fibre, Hamilton, O., as technical assistant to the director of production.

DELBERT C. MEYER has been appointed assistant chief engineer of The Gardner Board & Carton Co., Middletown, O. He was former chief engineer of Shellmar Products in Mt. Vernon, O., and was manager of engineering for R. R. Donnelly & Sons. Born in Indianapolis, he graduated from Purdue.

HOWARD LOVENSHEIMER was appointed to assistant to the pulp mill supt. at The Mead Corp., Chillicothe, O. He has been a tour foreman since 1944 and with Mead since 1929. Two sons, *GEORGE* and *GLEN LOVENSHEIMER*, also work for Mead in Chillicothe in the Development laboratory.

Veneer waste defiberized in Bauer Refiners



Shown in the above photograph are three Bauer No. 400 Refiners in the hardboard plant of The Coos Bay Lumber Company, Coos Bay, Oregon.

After log centers and veneer trimmings are chipped, the chips are steamed for 5 to 20 minutes. In due course, the semi-dry chips are fed into the Bauer refiners. Each refiner is equipped with two sets of discs rotating in opposite directions.

The rubbing action of the discs separates the chips into fibers. This is called "defiberizing" according to THE DICTIONARY OF PAPER—"The separation of fiber bundles into their individual fibers."

From the refiners the "pulp" goes to a blender where binders are added. Eventually, the fibers are fluffed and "snowed" down on a belt to a thickness of as much as six inches. A preliminary squeeze compresses the mat to permit sawing into sheets which are finally pressed into hardboard.

Of course, everyone in the pulp and paper industry recognizes the difference between the defiberizing of semi-dry chips and the refining of pulp slurry at 4% to 5% fluid consistency. Yet Bauer refiners are used with equal success for both processes, proving the adaptability of these versatile machines.

Further information on our refiners, both single and double revolving disc types, will be gladly furnished. You are invited to ask for our literature. Remember, too, that our research laboratory is available for testing the defiberizing, refining, reduction, or mullen development of any material in which you are interested.

THE BAUER BROS. CO.

1706 Sheridan Ave.
Springfield, Ohio

Personals

MIDWEST NOTES, Continued

STANTON MEAD, president of Consolidated Water Power & Paper Co., Wisconsin Rapids, has been named a trustee of Lawrence College in Appleton. Mr. Mead was born in Rockford, Ill., graduated from Yale in 1922, when he went to work in Consolidated. He was elected a director in 1927 and reached the presidency in 1950. He is also president of Newaygo Timber Co., Port Arthur, Canada. As a director of Trees for Tomorrow he has taken an active interest in forest conservation and development.

WALTER E. STILP, 59, owner and manager of the Accounts Adjustment Bureau, Wausau, Wis., and brother of A. J. Stilp of Menasha and W. J. Stilp, of Appleton, prominent in this industry, was killed when his car was struck by a Milwaukee Road train near Tomahawk, Wis.

ROMAN SCHMID has been appointed director of salse service of Consolidated Water Power & Paper Co., Wisconsin Rapids, taking over duties formerly held by *EARL M. (MICKEY) McCOURT*, who was promoted to sales manager of pulp, waxing paper, sulfite specialties and by-products including Consoweld. Mr. Schmid was an assistant to Mr. McCourt. He graduated from U. of Wisconsin and served as air force officer in World War II.

JOHN T. WALMSLEY has been appointed salesman in Hooker Electrochemical's Chicago office at 1 No. LaSalle St. He previously had been in Tacoma, Wash., and Niagara Falls, N.Y. plants in sales work.

DOC SOUTHON, chairman of board, Kalamazoo Vegetable Parchment Co., was a visitor in England and Europe this past summer.

H. THOMPSON LATHAN, working out of Chicago for years for Du Pont dyes and chemicals division, has moved to 6451 Greenfield Drive, Cincinnati, O., to be closer to his customers.

IN SOUTH AND ON COAST

PAUL MARMONT (left), Manager of Southwestern Gear Works, subsidiary of Western Gear Works, which opened district office at 500 South Ervay St., Dallas, Tex. A registered professional engineer, Mr. Marmont joined Western in Portland, Ore., in 1947 and served in Houston. A second daughter being born in Texas, Mr. Marmont now says he's a Texan. SAMUEL B. FELIX (right), appointed General Manager of De Laval Turbine Pacific Co. with offices and plant in San Francisco and district offices in Los Angeles and Seattle. He was Supt. at the parent De Laval Steam Turbine Co., Trenton, N.J.

SOUTHERN NOTES

RAY (SLIM) BULLOCK, pulp mill superintendent, Ecusta Paper Corp., Pisgah Forest, N.C., recently attended his 1931 class reunion at Mercer Academy, in Macon, Georgia.

MARK PLUNGUIAN has become research director for Southern Chemical Cotton Co., Chattanooga, Tenn. He previously headed woodpulp research at the Summit, N.J., central research laboratory of Celanese Corp. of America.

ARTHUR L. ROSS, assistant general manager of Southern Kraft Div., was elected a vice president of International Paper Co. at a recent meeting. Mr. Ross joined the late R. J. Cullen at the Bastrop, La., mill in 1925, serving as chief chemist, and rising through management trusts to his present position.

W. L. HENDRIX, who joined Herty Laboratory at Savannah, Ga., in 1933, has accepted the post of superintendent of the new 17,250 tons per year newsprint from bagasse mill being erected by Valentine Pulp & Paper Co. at Lockport, La.

E. L. COWAN has become plant engineer for Bowaters Southern Paper Co., Calhoun, Tenn. Formerly he was Gaylord Container Corp.'s assistant chief engineer.

JOE R. MYERS, now Southern representative for Hubinger Co., still lives in a town named Columbus. He just moved from Indiana to Georgia.

JUSTIN McCARTHY, chief engineer of St. Regis Paper Co., Jacksonville, Fla., has one son, Pat, in Korea, and another Jim, in Stanford University.

PAUL S. FENSOM, has been appointed director of purchases for St. Joe Paper Co., Port St. Joe, Fla.

WINSLOW B. MILLS is general superintendent, kraft div. mills, Pensacola, Fla., for St. Regis Paper Co., vacated when U.J. Westbrook became production manager, Florida mills.

W. W. HENDERSON & SONS, Pensacola, Fla., have become Southern representatives of Fulton Iron Works, St. Louis.

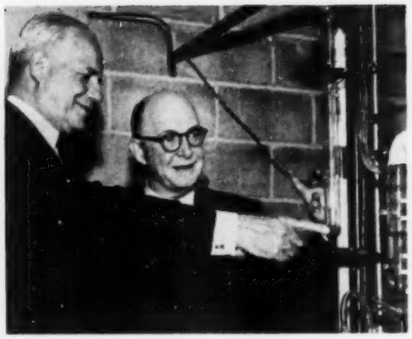
ALLEN BETZ, Betz Engineering Sales Co., has become representative of Electric Machinery Mfg. Co., in New Orleans served territory. He recently removed his office to 1719 Toledano St. (Jackson 8691) from 1225 Magazine St.

PACIFIC COAST NOTES

VERNICE CHARLES and her brother. *NORMAN McCURDY* and his family had a reunion with their parents in Oconto Falls, Wis., in July. Their father is a retired lumberman of that area.

N. O. (Nog) GALTELAND, who formerly was with St. Regis, Tacoma, and in instrument supply business serving Pacific Northwest mills, writes from the Island of Capri that he is on an extended vacation touring Italy, Austria, Germany and Scandinavian countries for several months. He was with the big airport construction project of U.S. defense forces in West Africa.

BRIAN SHERA, Penn Salt Mfg. Co. of Washington, Tacoma, Wash., was soon due to be a father-in-law as this was written. His son. *EDWARD COLLINS SHERA*, Yale football star and member of the president's advisory council at Yale, was marrying in midsummer Miss Joanne Baunsgard, who attended University of Washington and whose home is at American Lake, near Tacoma.



RAYONIER SCHOLARSHIPS

PRES. HENRY SCHMITZ (left), U. of Washington, Seattle, shows research equipment to DR. ARTHUR N. PARRETT, Vice Pres., in charge of Research and Development, Rayonier, Inc., who visited campus to present $2,500 graduate fellowship and $1,000 undergrad scholarship for College of Engineering, largest ever made for that division. Rayonier also established $1,000 scholarship at U. of Florida and $2,500 fellowship at Georgia Tech.

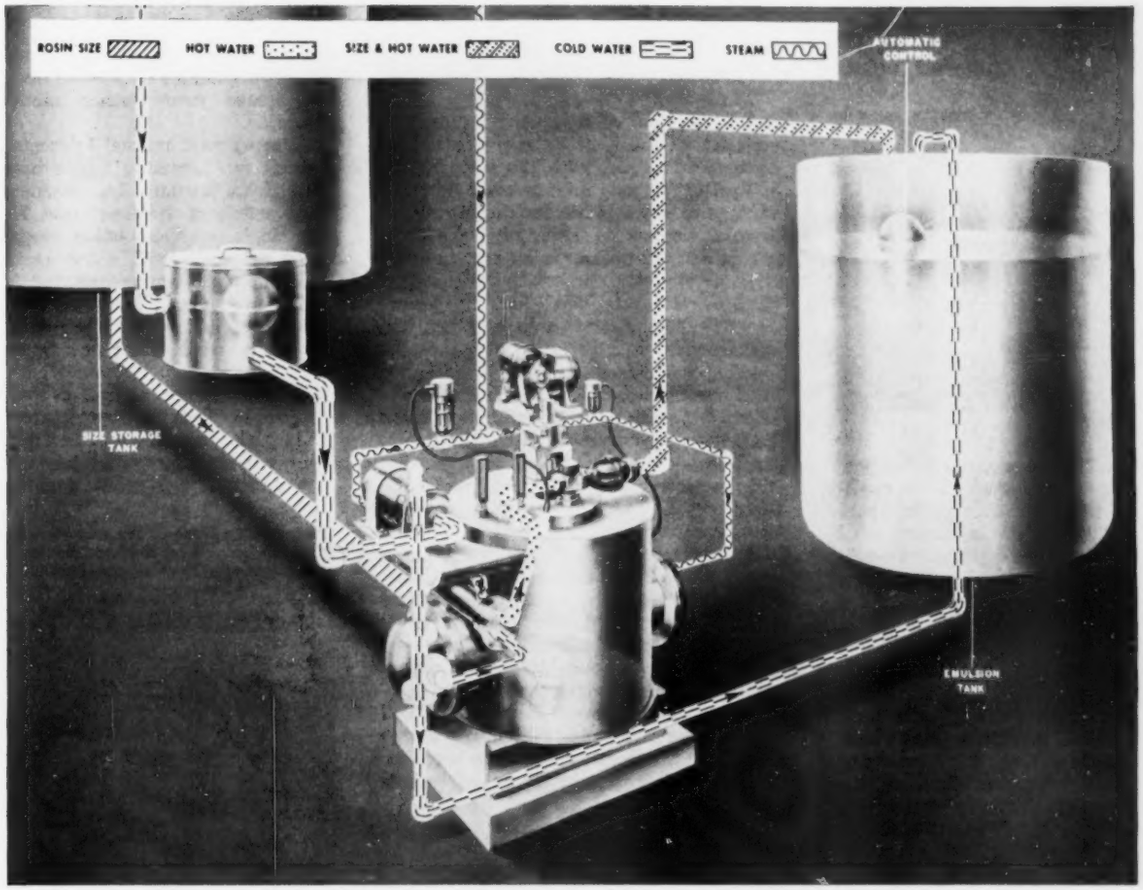
BOB BURK, in Seattle sales territory since 1950 for National Starch Products Inc., has been promoted to sales supervisor in Los Angeles. *FRED T. KING*, from Minneapolis territory and a graduate of Ohio Wesleyan, will handle sales in the Pacific Northwest and make new headquarters in Portland, Ore.

MILTON J. MAGUIRE, Portland, Ore., has added the W. P. Evans & Sons Rotabelt suction unit, introduced in U.S. from England, to his line of accounts as Pacific Coast representative. Mr. Maguire represents Staley starches, Sinclair Co. and Brandon dryer felts.

H. W. PRESTON, 62, sales manager, Oregon Pulp & Paper Co., and chairman of the executive committee of the West Coast Bureau of Lumber Grades and Inspection, died June 4 at his home in Silverton, Ore. He was 62.

PERSONNEL PROMOTIONS at Potlatch Forests, Inc., Lewiston, Ida., have been announced by *WILLIAM P. DAVIS*, president-general manager, including the following: *E. C. RETTIG*, formerly assistant general manager, to first assistant general manager; *H. N. ROONEY*, purchasing agent, was named special assistant to the president; *JAMES SCOFIELD*, assistant purchasing agent, became purchasing agent; *GEORGE RAUCH* succeeds Mr. Rettig as manager of forestry, land, timber and logging operations; *VANCE V. VALLANDIGHAM*, formerly manager of research and development, has been named assistant manager of pulp and paper division; *D. R. HOPKIRK* was named comptroller.

JAMES P. TOWEY, formerly general sales manager, kraft and sulfite division, and *WILLIAM J. ZELLERBACH*, formerly manager of specialty and new product sales, Crown Zellerbach Corp., San Francisco, have each been promoted to the post of assistant to *G. J. TICOULAT*, vice president in charge of kraft and sulfite sales. *EDWARD P. PARTLAND*, formerly assistant general sales manager of the kraft-sulfite division was promoted to manager of industrial sales.



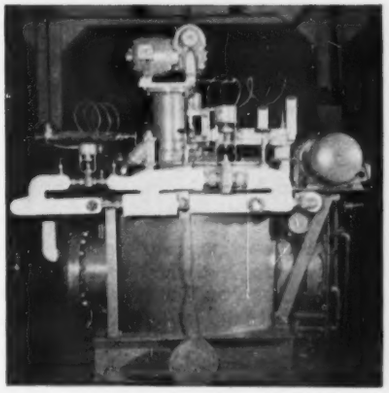
This drawing depicts the Hercules Automatic Emulsifying Process in operation, and traces the flow of rosin size, hot water, cold water, and steam to the final rosin size emulsion.

HERCULES AUTOMATIC EMULSIFIERS CUT SIZING COSTS IN OVER 60 MILLS

A steadily increasing number of paper and board mills are reducing labor costs and space requirements, while getting better uniformity in their size emulsions, with the Hercules Automatic Emulsifying Process—introduced by Hercules in 1948.

Latest figures show that more than 60 Hercules Automatic Emulsifiers are now in daily operation, and many others are being installed or on order. This represents an overwhelming majority of the total number of all automatic emulsifiers in the paper industry.

For further details, write for technical booklet.



Occupying a space of only 6 ft. by 6 ft., this Hercules Automatic Emulsifier can be conveniently placed in most paper mills.

PP53-4

SERVING YOU BETTER · THRU BETTER SERVICE ·

Paper Makers Chemical Department

HERCULES POWDER COMPANY

INCORPORATED

965 King St., Wilmington 99, Del.

SIZING MATERIALS AND CHEMICALS FOR PAPER

VA-PURGE PROCESS AND ITS EFFECTS

By Paul J. Schmitt
Chemical Engineer, P. H. Glatfelter Co.

PAUL J. SCHMITT, author, who writes his impressions for PULP & PAPER of Va-Purge, first reported in detail in our July issue.

THE VA-PURGE PROCESS consists basically of a pre-cook treatment by which the cooking liquor penetrates the chips far more rapidly than is possible in conventional cooking. (See July, 1953, PULP & PAPER). Penetrating each chip rapidly, the liquor loses comparatively little strength and a far more even cook results.

The rapid penetration is accomplished by evacuating the air from the chips prior to liquor charging. To remove the air, steam is added to the digester until a predetermined pressure has been reached and the steam has penetrated the chips. Upon release of pressure, air is carried out of the chips with the steam. Liquor is then added and the pressure again increased. Having been at least partially evacuated of air, the chips are rapidly penetrated by the liquor.

The initial pilot plant work on Va-Purge was followed by mill trials in numerous Canadian and a few United States mills. Unfortunately, in some mills several changes other than Va-Purge were inaugurated at the same time so that it was not always possible, from the papers presented at the CPPA meeting, to evaluate the effect of Va-Purge alone.

In mill trials where a comparison with normal operation was made, screen rejects and shives were consistently lower when the Va-Purge process was used. In some cases the cooking time was shortened, resulting in a pulp of higher permanganate number but showing no increase in screen rejects. Thus it appears that a better cook is definitely being obtained with Va-Purge. However, mill trials to date show no consistent trend toward increased strength.

Comparatively little information is as yet available on bleach requirements, especially when the pulp is cooked to a higher permanganate number. Contrary to what might be expected, the opinion seems to be that little extra bleaching will be required. This cannot be fully determined, however, until the results of appreciably longer mill trials are available.

The main barrier to more extensive experimental work with Va-Purge in many mills is the lack of satisfactory equipment and facilities. In order to obtain the best results it is essential that lines and pumps are available for very rapid introduction and withdrawal of steam and liquor. The majority of mills, of course, are not so equipped. Further, with the introduction of Va-Purge, many mills want to take advantage of vapor phase cooking, i.e. withdrawing the excess liquor after the chips are penetrated and carrying out the cook with only vapor surrounding the chips. Here again special conditions are necessary. In sulfate and soda cooking, the withdrawn liquor, to be reused, must be fortified with very strong white liquor; much stronger than that which is now obtained from the recovery systems. In the sulfite process, vapor phase cooking is not possible with calcium bisulfite.

As mentioned above, vapor phase cooking seems desirable and is now possible with Va-Purge, provided adequate facilities are available. With the liquor withdrawn, the reduced time required to reach cooking temperature is impressive; time savings may well justify the necessary changes and overshadow the advantages of Va-Purge when used by itself. Continuous cooking also appears now as a possibility in mills where it was not practical before. Thus the importance of Va-Purge may lie in the known techniques it makes practical rather than in any improvements it offers by itself.

Nielsen Opens Pulp-Paper Office In New York City

Olaf Nielsen, Jr., formerly first vice president of Elof Hansson, Inc., has opened offices at 21 E. 40th St., New York City, where, in association with K. O. Hohle, he will carry on trade in pulp imports and paper exports. Mr. Nielsen and Mr. Hohle are also associated in K. O. Hohle, Inc.

Link-Belt Promotions

LINK-BELT CO. has appointed HARVEY V. EASTLING (left) Asst. General Mgr. of its Pacific Division, with headquarters at San Francisco, and DONALD E. THAL (right) as Sales Mgr. at San Francisco. Mr. Eastling, heretofore Gen. Sales Mgr. for the Pacific Division, started his Link-Belt career in 1925 as Chief Draftsman at San Francisco. He has served as Chief Engineer at San Francisco; and Manager, Engineering Sales, at Seattle. Mr. Thal studied mechanical engineering at the University of Illinois and Mass. Tech., and has since 1935 been in Link-Belt engineering in Chicago, Seattle and San Francisco, and was Asst. Sales Mgr., San Francisco.

Marathon Launches New House Organ

Marathon Corp. has launched a new house organ, an illustrated magazine to be issued every other month called *Maralog*.

"People with mutual interests stand to benefit by becoming better acquainted," said John Stevens, Jr., president, in the lead article of the first issue. He added: "A single, company-wide magazine can, over the long haul, show us the whole Marathon picture by bringing individual parts into sharper focus. As associates of Marathon, each of us has a perfect right to know what the other is doing and why."

A new cartoon character also was introduced—"Packy"—representing Marathon packaging products. In the first issue he announced he would take readers on tours of company plants and operations.

PACKY is the name of this new character who will take readers on tours of Marathon operations in the company's new house organ—MARALOG.

Peekin' with Packy.....

West Virginia Gets South American Subsidiary

West Virginia Pulp and Paper Co. has made outright purchase of a small integrated pulp and paperboard mill and box plant in Valinhos, Brazil, which it will operate as a South American subsidiary. The plant will be managed by M. H. Collet, who has been in Brazil since Oct. 1952, investigating potentials of Latin America for pulp and paper manufacture. Corporate title of the plant is Rigesa, S.A., which is the brand name of the products manufactured.

Vancouver Meeting

Fall meeting of the Pacific coast branch of the Technical Section, CPPA, will be held at Devonshire Hotel, Vancouver, B.C., Saturday, Oct. 3, when papers will be presented on water removal on Fourdriniers, maintenance of fork lift trucks and rubber as it applies to the industry.

D. H. Patterson Jr. Dies

David H. Patterson, Jr., president of Fibreboard Products Inc., from 1939-1949, died at his Marin county, Calif., ranch on July 4 at age of 77. His entire career was in paperboard.

EQUIPMENT AND SUPPLY COMPANY NEWS

CONSOLIDATED CHEMICAL INDUSTRIES, INC., 111 Sutter St., San Francisco, Calif., has available a reprint of an article by William Q. Hull in collaboration with Walter G. Bangert, Consolidated Chemical, on animal glue, from *Industrial and Engineering Chemistry*, October 1952, which gives quite concise information on the manufacture and uses of animal glue. Copies are free for the asking.

SPRING PACKING CORP., 332 South Michigan Ave., Chicago 4, announces new industrial asphaltic coatings, containing an exclusive additive which permits application over damp surfaces. This permits application of waterproof or anti-corrosive coatings under moist or excessively humid conditions and eliminates manhours lost while waiting for surfaces to dry completely.

THE BLACK-CLAWSON CO., Dilts Machine Works Div., Fulton, N. Y., announces the New Dilts Model "UA" single position unwind stand which features an air-actuated brake for regulating tension of unwinding webs, such as paper, board, cellophane, foil, or film.

BALDWIN-LIMA-HAMILTON CORP., Philadelphia 42, Pa., has issued Bulletin 4105, which describes typical applications of Baldwin SR-4 crane scales and indicating or recording instruments for weighing loads electronically.

LINK-BELT CO., 307 N. Michigan Ave., Chicago 1, offers a new line of roller chain sprocket wheels with taper lock bushings facilitating immediate delivery and rapid installation. A 16-page book (No. 2449) gives detailed information about these sprocket wheels.

ON JOB AT NEW MILLS

EQUIPMENT COMPANIES installing or servicing in new mills in South are represented by these field men, whose pictures were snapped by a touring PULP & PAPER editor. Top row (l to r): R. F. WRIGHT, Field Engineer for General Electric Co., works in generating and distributing departments of mills; CHARLES C. ANDERSON, General Electric Field Engineer, who worked on paper machine drives at St. Regis' Pensacola and Jacksonville mills; DOUGLAS ANDERSON, who works out of General Electric's Atlanta division office, in the pulp and paper field. Lower Row (l to r): J. H. MACY, from Yarnall-Waring's Atlanta office, installing digester blow valves at National Container Corp.'s Valdosta, Ga., mill; R. L. BURNS, refractory setter for Combustion Engineering's boilers being installed at new Valdosta mill; WALTER MILLHOUSE, Cameron Machine Co., who will install that company's equipment at Bowaters Southern Paper Corp., Calhoun, Tenn.

SUTHERLAND REFINER CORP., Trenton, N. J., announces a 12-in. breaker trap to meet the industries' demands for a defibering unit suitable for lower tonnages than the 18-in. unit introduced by Sutherland some months ago. The new trap is used as a selective defibering unit for waste papers and similar coarse refining operations.

SVEEN-PEDERSEN SALES CORP. has moved to larger quarters at 25-36 Jackson Ave., Long Island City, N. Y.

BLACK-CLAWSON CO. has recently announced that its Shartle Bros. Mach. Div., at Middletown, O., will build and sell the new Shartle Strindlund Tube Type Filter under licensing by A. B. Ekstroms Maskinaffar of Sweden. This filter is a newly designed valveless vacuum filter featuring a self-contained vacuum source.

FOXBORO CO., Foxboro, Mass., announces a new ribbon-type indicating receiver for graphic panel use. This model 50 Consotrol indicator is especially suited to panel applications which require continuous indication of valve position or variables such as liquid level.

CAMERON MACHINE CO., 61 Poplar St., Brooklyn 1, N. Y., recently installed one of the world's highest speed winders at

for experimental

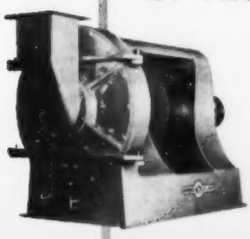
PULPING AND FIBER

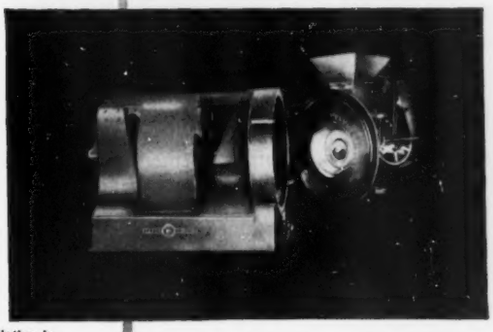
studies—

2 S-W REFINERS

24" PILOT PLANT Refiner

The best compromise between laboratory and commercial refiners. Integral motor or V-belt drive. 25 to 75 HP.

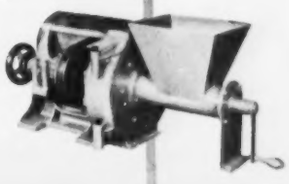


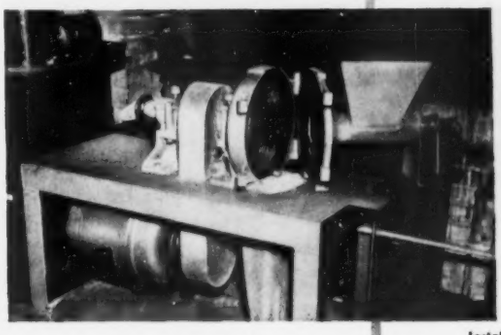


Installation in Pulp & Paper Research Institute of Canada.

12" LAB Refiner

Large enough to handle the output of most experimental digesters, yet small enough to pulp small quantities efficiently. 5 to 10 HP drive.





Installation in a pulping research laboratory.

the STANDARD of the Industry
for experimental pulping

- Accurately producible operation.
- Versatile to meet the entire range of pulping requirements.
- Available in stainless steel.
- Reasonable cost—negligible maintenance.

THE *most advanced* EXPERIMENTAL REFINERS

For complete information, write
Sprout-Waldron & Co., Inc., 32 Logan Street, Muncy, Pennsylvania

S W MUNCY, PA.

SPROUT-WALDRON
PULP REFINERS

269-A

West Virginia Pulp & Paper Co.'s Charleston, S. C., mill. This winder, known as the Imperial "100," has a trim width of 234 in. and a rewind capacity of 72 in. dia.

RELIANCE ELECTRIC & ENGINEERING CO. has issued a booklet describing and illustrating a newly improved electronic adjustable-speed drive of from ¾ to 3-hp. designed for powering a wide range of small industrial equipment. This 12-page bulletin (D-2102) provides a comprehensive presentation of the Reliance V-S, Jr. Copies available on request by writing Reliance, 1111 Ivanhoe Rd., Cleveland 10, Ohio.

ALLIS-CHALMERS MFG. CO., has released a new bulletin describing its process pumps for handling corrosive and abrasive liquors. Copies of "Allis-Chalmers Process Pumps, 52B6615C", are available upon request from Allis-Chalmers Mfg. Co., 995 S. 70th St., Milwaukee, Wis.

CHAIN BELT CO. is distributing a new bulletin on its drive and conveyor series Chebelco Chains. For bulletin 53-59, write Chain Belt Co., Dept. P.R., Milwaukee 1, Wis.

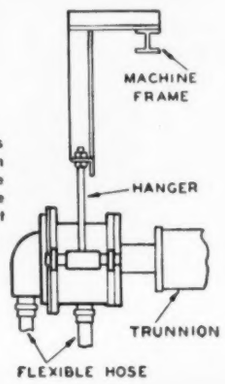
PENNSYLVANIA SALT MFG. CO., 1000 Widener Bldg., Philadelphia 7, Pa., announces that Harry G. Smolens has joined the Technical Service Dept., as customer consultant on bleaching.

ELWELL-PARKER ELECTRIC CO., 4205 St. Clair Ave., Cleveland 3, O., has available an illustrated 8-page booklet on cost-cutting methods for fast, effortless handling of barrels and barrel "shapes" by power industrial trucks. Copies may be obtained by writing to the above.

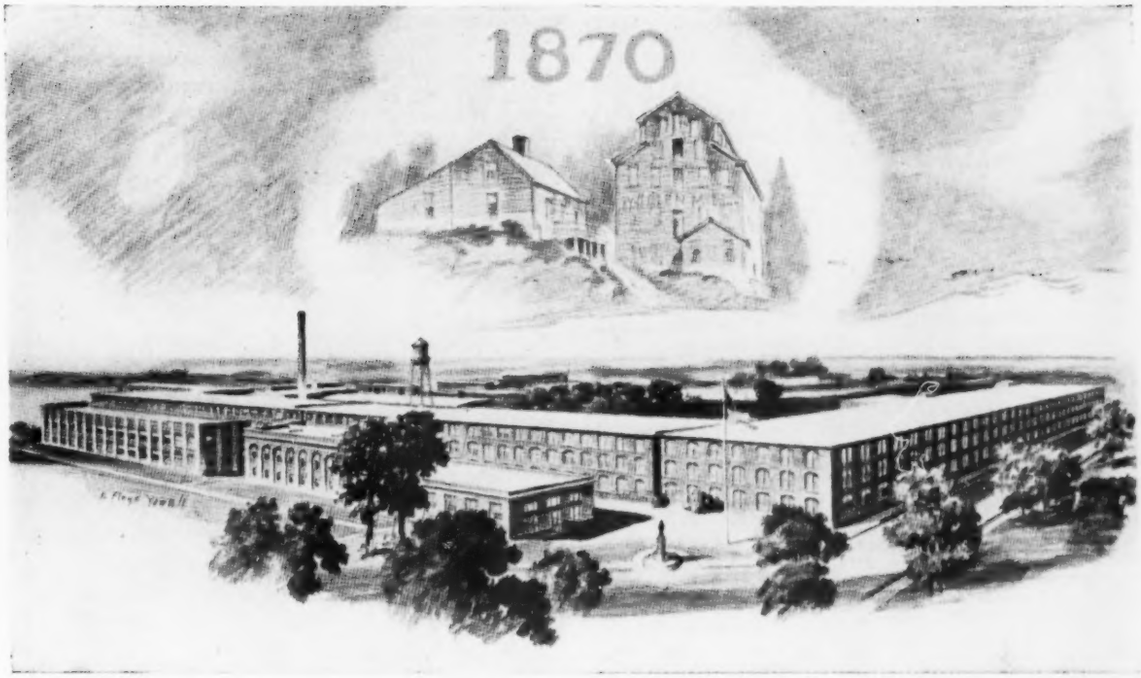
Johnson Type L Joints Now Available

Availability of the popular Type "L" Johnson rotary pressure joints in all sizes of the standard Johnson Joint has been announced by the Johnson Corp., Three Rivers, Mich., manufacturers of steam specialties and boiler room equipment. Of further interest concerning the Type "L" is development of a novel suspension method of support.

Johnson rotary pressure joints are used for the introduction of steam or other liquids under pressure into rotating machine parts. They have found wide application in the paper industry. The Type "L" is a modification of the standard Johnson joint especially developed to facilitate the proper mounting so important to proper joint operation.



Drawing shows details of Type "L" Johnson Joint and how it can be supported by adjustable hangers suspending joint from machine frame.



83 YEARS

OF PAPER PROGRESS

Eighty-three years ago, as the great expansion began in America's paper industry, F. C. Huyck & Sons began to develop quality papermakers' felts.

Recognizing that every paper problem is a felt problem, this organization pioneered in research and specialized in service.

With exceptionally well-equipped research laboratories, Huyck today meets the challenge of the huge paper industry with new developments in felt while upholding an established tradition of consistently dependable products.

KENWOOD TEXTILE PRODUCTS

HUYCK FELTS

F. C. HUYCK & SONS • ESTABLISHED 1870 • RENSSELAER, NEW YORK

Johnston of Puseyjones In Far West

R. S. Johnston, vice president of The Pusey and Jones Corp., Wilmington, Del., recently made his annual trip through the Pacific States and British Columbia and stopped in at PULP & PAPER offices at Seattle. Mr. Johnston's coastal treks have become an annual event. since 1925.

Chas. T. Main Grows

Chas. T. Main, Inc., 80 Federal St., Boston, Mass., has taken over the business of John A. Stevens, Inc., Engineers, of Lowell, Mass. The key personnel of this 44-year-old company has been moved to the Boston office of Chas. T. Main, Inc.

WRONG SEEDS SOWN

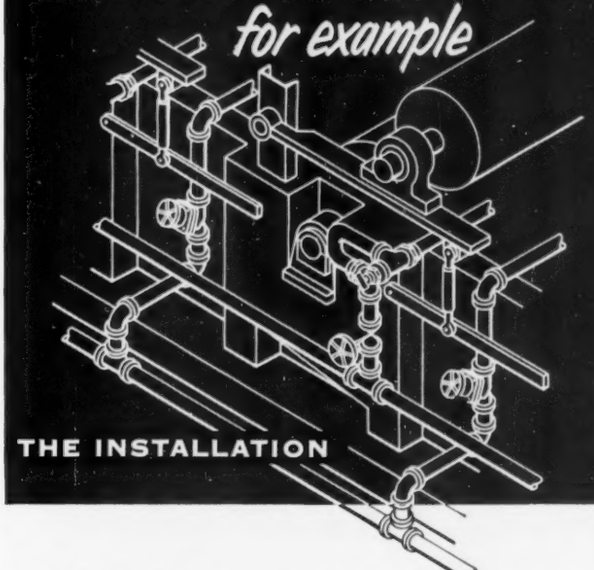
The gentleman on the left is HAROLD K. SEEDS, who was incorrectly identified in our July issue as RICHARD E. LAWTON. Mr. Lawton is seen at the right. Mr. Seeds has joined Crown Zellerbach, Portland, Ore., as Assistant to Manager of Specialized Personnel Placement; Mr. Lawton was recently promoted to Supervisor of Industrial and Community Relations at Crown Z's Camas, Wash., mill.

Beattie of Inco Dies

R. Leslie Beattie, Vice President and General Manager of Canadian Operations of International Nickel Co. of Canada, Ltd., died June 10 in Toronto, at the age of 62.

How This Valve Keeps Doing What Others Couldn't ...on White Water Service

for example



THE INSTALLATION

At the Excello Paper Products Co., Inc., Cincinnati, featuring Crane Diaphragm valves on white water piping to cylinder tanks on paper machines.

VALVE SERVICE RATINGS

SUITABILITY:	"Made to Order" for tough jobs
FEATURES:	Seats tight where others fail
MAINTENANCE COST:	None – needs no attention
SERVICE LIFE:	Many times longer than expected
OPERATING RESULTS:	Machine room efficiency improved
AVAILABILITY:	Crane Catalog item – No. 1610

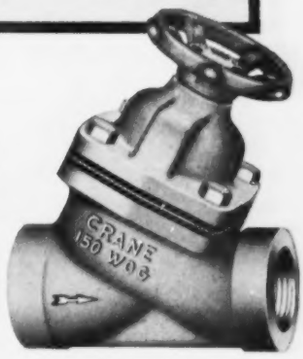
THE CASE HISTORY

Just previously, the plant had resorted to filling white water tanks manually with hose lines . . . so annoying and costly had been the trouble with valves formerly used in this service. Many had been tried, but none could handle the solids and fibers that built up in the bonnets and seats between tank fillings. Almost immediately, the valves became inoperable and leaked at the seat.

Keeping up with valve maintenance, the messy floors, and the safety hazard of white water leakage was an endless task. That's when the plant turned to the hose technique. But not for long, because Crane Diaphragm valves remedied the trouble. They were installed about 6 months ago. Machine room efficiency was improved. The white water leakage hazard to workers was stopped. Plant appearance was improved. And the Crane valves keep doing these things without a penny's maintenance cost to date.

THE VALVE

Crane Diaphragm valves are packless; they eliminate the annoyance and expense of stuffing box leakage. Bonnet and working parts are sealed to fluid; solids or sedimentary accumulation can't interfere. A pliable disc insert absorbs and seats tight on particles that cause leakage in other valves. Independent disc and diaphragm construction saves wear on diaphragm, and even should it fail, valve can be seated. Choose these valves from a wide selection of body and trim materials for corrosive, abrasive, and ordinary services. See your Crane Catalog or Crane Representative.



THE BETTER QUALITY...BIGGER VALUE LINE...IN BRASS, STEEL, IRON

CRANE VALVES

CRANE CO., *General Offices:* 836 S. Michigan Ave., Chicago 5, Illinois
Branches and Wholesalers Serving All Industrial Areas

VALVES • FITTINGS • PIPE • PLUMBING • HEATING

Mill at Port Alberni

BLOEDEL SUPERTARE KRAFT

Mill near Nanaimo

HARMAC BLEACHED SULPHATE

Two great mills, producing bleached and unbleached Sulphate pulp, provide a reliable open market supply for discriminating buyers.

The "brightness" of HARMAC pulp with the chlorine dioxide system of bleaching, and the "cleanliness" of BLOEDEL KRAFT, are features that contribute to the popularity of these products in world markets.

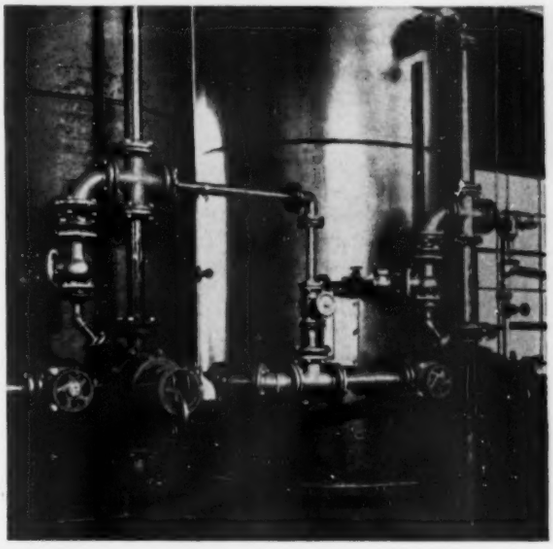
Rail and deep sea facilities at both mills.

MacMILLAN & BLOEDEL LTD.
837 West Hastings Street, Vancouver 1, Canada

CUT CORROSION COSTS

DOW

install corrosion-resistant SARAN LINED STEEL PIPE for long, trouble-free service



Saran Lined Pipe, Fittings and Valves are used in this automatic water deionizer in a large water purification system. Installations such as this give trouble-free service for many years.

Corrosion-resistant Saran Lined Steel Pipe sharply reduces repair and maintenance costs in corrosive piping installations. Downtime is cut to a minimum because this rigid pipe has high pressure strength and durability—which mean dependable, long-term service. Easily installed Saran Lined Steel Pipe can be cut and threaded in the field—no need for special tools or handling. Wherever superior resistance to most chemicals and solvents is demanded, be sure to consider Saran Lined Pipe, Fittings and Valves. Write to the distributor: SARAN LINED PIPE COMPANY, 2415 Burdette Avenue, Ferndale, Michigan. Offices in: New York • Boston • Pittsburgh • Tulsa • Philadelphia • Chicago • Portland • Indianapolis • San Francisco Houston • Denver • Los Angeles • Seattle • Cleveland Charleston, S. C. • Toronto • Montreal. Clip and send today!

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2415 Burdette Ave., Ferndale, Mich.
Please send me a copy of your catalog on Saran Lined Pipe, Valves and Fittings.

Name_____

Title_____ Company_____

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you can depend on DOW PLASTICS

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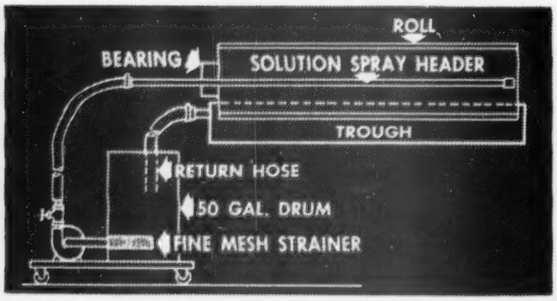

This set-up saves up to 40 hours cleaning suction press rolls

HERE's the method that eliminates drilling of suction rolls at a Southern mill. They just pump a solution of Oakite Composition No. 19 through the spray headers in the slowly rotating roll, through the holes into the trough, and back to the solution drum. Job is done in 6 hours.

Drawing on request. Ask your Oakite man, or write Oakite Products, Inc., 58C Rector St., N. Y. 6, N. Y.

SPECIALIZED INDUSTRIAL CLEANING

OAKITE

MATERIALS • METHODS • SERVICE

Technical Service Representatives in Principal Cities of U. S. & Canada

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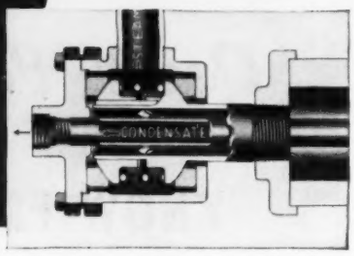
NEW TYPE J Johnson Joint

Johnson Type J Rotary Pressure Joint more than ever pays its way...



For putting steam in, taking condensate out, Johnson Joints have written an unequalled service record—have been adopted almost unanimously by machinery manufacturers. Now better than ever, the new Johnson Type J Joint weighs less, is smaller, costs less, has new style carbon-graphite seal rings giving an average of 25% greater wear. As before, it's packless, self-lubricating, self-adjusting to varying pressures, easy to service or repair right in the field. The new Type J Joint has simplified head design to permit condensate outlet connection in any direction. The inlet is now on the side of the body, which makes easier both the piping hook-up and the proper centering of the Joint. There's provision for special assembly plate to make easy removal of modern mechanical syphon pipe. Get the facts.

WRITE FOR NEW BULLETIN

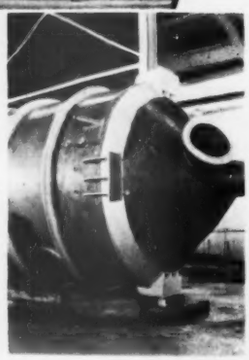
THE JOHNSON CORPORATION

349 Wood St., Three Rivers, Mich.

"Puget Sound" CAN HANDLE THE JOB

—If it's custom fabricated of metal up to one inch in thickness!

Shown at right is a typical example of PSSM custom plate fabrication for the pulp and paper industry—a section of stainless clad chlorine evaporator.



Free illustrated brochure on request.

PSSM (SINCE 1903) *Plate Fabricators for Industry*

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NEARLY 3 TONS TO A "BITE"

• THAT'S the way to speed your work and cut costs of unloading, stacking or rehandling pulpwood and logs. Blaw-Knox Pulpwood Grapples, like this one which is picking up almost 3 tons in one grab, are especially designed and built in a wide variety of sizes and types to meet the exacting needs of the Paper Industry.

MORE AND MORE PULP AND PAPER COMPANIES ARE USING BLAW-KNOX PULPWOOD GRAPPLES

34 leading pulp and paper companies have recently placed repeat orders for Blaw-Knox Pulpwood Grapples. Bulletin 2302 tells why—actual on-the-job illustrations show how others are cutting rehandling costs. Send for your copy of Bulletin 2302 today!

BLAW-KNOX COMPANY

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FOR PULPWOOD AND LOGS

FIRMS YOU SHOULD KNOW

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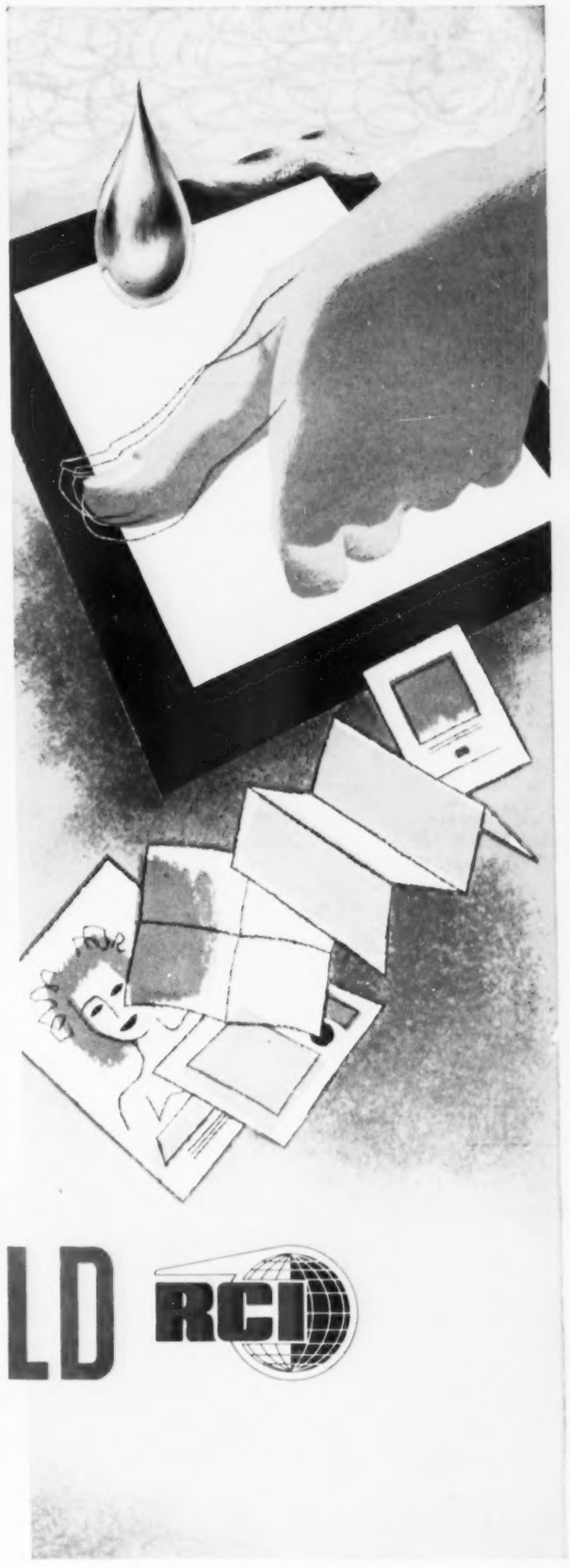
RCI
BECKAMINES

Improve
the Water Resistance of
Starch-clay Coatings!



● The wet-rub, as well as the wax and brightness of starch-clay coatings, will be improved if you add RCI BECKAMINES. These Reichhold resins are starch reactive, that is, capable of forming a chemical union with starch, either during the preparation of the adhesive or afterwards, in the processing and curing of the adhesive. They may be added to the starch during the cook, at top heat as a chill-back, or to the cooled finish adhesive. RCI has perfected two BECKAMINES . . . P-679-65 and P-685-50 . . . each of which does a specific job of improving paper coatings. To find which best meets your requirements, write for a copy of Technical Bulletin P-1.

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